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HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES

JULY—DECEMBER

1872

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THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A DIGEST OF BRITISH AND CONTINENTAL MEDICINE,

AND OF

THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

EDITED BY

WILLIAM DOMETT STONE, M.D., F.R.C.S. (EXAM.)

VOL. LVI.

JULY—DECEMBER, 1872.

LONDON:

J. AND A. CHURCHILL, NEW BURLINGTON STREET.

EDINBURGH: MACLACHLAN AND CO. DUBLIN: FANNIN AND CO.

MDCCCLXXII.

Vol. LVII. will appear on the 1st of July, 1873.

Books, &c., for notice, to be sent as soon as published (carriage free) to MESSRS. CHURCHILL, New Burlington Street.

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HALF-YEARLY ABSTRACT OF THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

Art. 1.—*On Some Questions Relating to Septicæmia.**

By M. Bouley.

(*Gazette Médicale de Paris*, No. 39, 1872.)

The author does not bring forward opposing and contradictory results to those reported by M. Davaine. He thinks only that it is necessary to inquire whether the statements of this observer are not in opposition to the results of clinical observation, and whether the law laid down by him is as applicable to certain large species of animals as it is to the animals of small species which M. Davaine made the subject of his experiments.

In other respects the researches of M. Davaine only confirm the facts previously discovered and reported by MM. Coze and Feltz Collin and others. From these facts it results that when one inoculates an animal with putrid material, a malady is produced which is characterised by bringing about such a modification that the blood of the inoculated animal acquires virulent properties of a higher power than that of the primary putrid material.

That which properly belongs to M. Davaine is the discovery of the fact of the unlimited development of the virulent power of the septicæmic blood. A drop of blood diluted to a trillionth, or even to the quadrillionth, suffices for killing an animal of the same species as that from which the septicæmic blood has been taken.

M. Bouley points out the difference which exists between the results obtained by M. Davaine and those described by M. Chauveau. This latter authority made experiments upon the effects of dilution of viri, and showed that just as the dilution was extended the properties of the virulent fluid diminished, and that at a certain moment the effects of inoculation became uncertain, sometimes positive, at others negative, ac-

* Communicated to the Academy of Medicine, Paris.

cording as with the point of the lancet was inoculated a virulent cell or simple serosity.

According to M. Davaine it is necessary to obtain a dilution of five milliards before one can make out any reduction in the strength of the virus.

M. Bouley thinks that the results of M. Davaine cannot be applied to species of large animals. The experiments of M. Collin have already demonstrated that the inoculation of putrid material kills small animals, such as pigeons, rabbits &c., but has no results in the sheep, even when the virulent matter is inoculated in doses of eight or ten drops.

Clinical observation has furnished M. Bouley with analogous results. In the cow, retention and putrefaction, either of the placenta or of the fœtus in the womb of the animal, give rise to symptoms of septicæmia which are not always fatal. It is extremely probable that death would have been the termination of this septicæmia if the blood of the cow had acquired, in consequence of the absorption of putrid matters, a virulence similar to that met with in the animals experimented upon by M. Davaine.

Doubt concerning the infinitesimal virulence of the blood of septicæmic cows is further raised by consideration of the habitual harmlessness of manœuvres and operations practised on animals by veterinary surgeons. Thus M Bouley has often been obliged to introduce the hand and arm into the organs of cows suffering in consequence of non-deliverance, and to retain them during two, three, or four hours in contact with the blood and the putrid fluids of these animals, and yet he has never experienced the least inconvenience. The numerous assistants who followed his clinique and assisted him in his operations also remained exempt from any accident.

It was the same in cases of putrefaction of the fœtus in the womb of the cow and in cases of traumatic gangrene in horses. In operations practised on these animals for remedying this serious affection M. Bouley has had his hands in constant contact with gangrenous and putrefied matter and has been covered with blood from head to foot, and yet, though he had excoriations and small wounds, never experienced a single bad symptom. Hence one must conclude that if these animals were septicæmic their blood at least was not virulent.

M. Bouley does not deny the possibility of the development of serious symptoms in consequence of the inoculation of septicæmic blood from large animals, but thinks that, as the results of the experiments made by M. Davaine are so grave, an appeal should be made to this pathologist to apply his experience to horses, in order to elucidate the various questions connected with septicæmia.

Does the virulent property of septicæmic blood exist during the lifetime of the animal, or is it merely a posthumous condition resulting from its death?

However this may be, it results from clinical observation that putrid material may remain for a long time in contact with the organism of the cow or horse without giving rise to fatal symptoms in men or in animals, on whom inoculation of the blood of these animals has been practised. Here there is a result which is opposed to the terrifying consequences of the experiments of M. Davaine.

Art. 2.—*On Cutaneous Absorption.**

By M. Brémond.

(*Archives Générales de Médecine*, Août, 1872.)

"1. The cutaneous absorption of a non-volatile medicinal substance cannot be denied; it has been irrefutably established by experimentation with baths of vapour from medicated water.

"2. In ordinary cases it is not possible under a temperature of 38° C.; that is to say, it may take place at a temperature below that of the body.

"3. With the previous employment of a vapour bath, followed by soaping and energetic frictions, one may cause absorption of iodide of potassium by the skin at temperatures lower than that of the body—viz., at 34° and 36° C.

"4. With an apparatus which I use cutaneous absorption increases in direct proportion to the elevation of the temperature of the vapour bath, its duration, and the quantity of iodide of potassium it contains.

"5. With this apparatus the head of the patient is left external to the cage, and his neck is surrounded by a cloth in order to prevent the vapour from passing out, and to render absorption by the pulmonary passages very difficult. The anatomical disposition of these regions and the presence of mucus on the mucous membranes prevent the metallic molecules carried by the air or by the vapour from penetrating into the pulmonary passages. Besides, the remote occurrence of the elimination of the potash salt by the urine, which cannot be made out until at a period of two hours after the bath, proves that the absorption does not take place at the pulmonary passage.

"6. The salt is held in suspension in the watery vapour, and is carried mechanically into the wooden cage.

"7. The elimination of this salt commences about two hours after the bath, increases in quantity until the next meal, after which it seems to diminish in consequence of the quantity of water taken into the system; it afterwards becomes more abundant, and twenty-four hours afterwards completely ceases, whatever may have been the dose of the salt and the temperature and duration of the bath.

"8. When the patient has taken ten or twelve baths the elimination is continued for three or four days; if he has taken between twenty-five and thirty baths it persists for ten or twelve days after each.

"9. A simple vapour bath followed by soaping and energetic frictions is very useful in hastening and favouring absorption of a non-volatile medicinal substance in a vapour bath."

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* Communicated to the Académie des Sciences, Paris.

Art. 3.—*On the Dangers to which the Abuse of Alcoholic Drinks may give rise.*

By Dr. Jules Bergeron.

(*Annales d'Hygiène Publique*, Juillet, 1872.)

1. Man is especially distinguished from the beast by his possessing a sense of his liberty of action for good as well as for evil, and consequently a sense of his responsibility.

2. Whenever man loses this double sense he declines, and falls to the rank of the beast.

3. When this decline is due to disease it is a misfortune for the individual; but it becomes a disgrace when he causes it himself by the abuse of intoxicating drinks, for he thus voluntarily casts off the most noble of his attributes, that which above all others establishes his superiority—viz., his *moral conscience.*

4. Assuredly it is not this decline which is intended by the individual who takes fermented drinks; what he at first seeks in their use is a temporary pleasure and a short repair of his strength.

5. Within certain limits this use of alcoholic drinks is not reproved by hygiene; it may be even admitted with justice that if it be not indispensable to good health, it is still not without some utility.

6. But however moderate it may be, it is not without danger, for it is not necessary to arrive at the abuse of fermented drinks in order to find that under the influence of the alcohol which all contain the brain undergoes a certain degree of excitation, which gives to the mind more vivacity and a disposition to regard all things on their best side.

7. It is not surprising that an individual, when once he has felt this sensation, should seek to renew it. But here is precisely the peril; for this slight cerebral excitation, however harmless it may be in itself, is after all but the first degree of drunkenness, and when this has been exceeded the individual, carried along an insensible declivity, passes speedily from occasional excess to habits of drunkenness, to fall rapidly into all the physical and moral miseries which are engendered by habitual indulgence, and there he is lost.

8. Whatever be the nature of the fermented drink, it is the contained alcohol particularly which acts upon the organism. We may, then, take as the type of action of these drinks common eau-de-vie—that is to say, pure alcohol mixed with its own volume of water. When it is more diluted—as, for example, in the ordinary drinks, wine, beer, cider, or perry—its effects are evidently less marked. On the other hand, they become terrible when the alcohol is more concentrated; but they then constitute mentally acute and rapidly fatal poisonings, over the consideration of which it is not necessary to linger here, as these are but accidents occurring to more isolated individuals in the midst of the innumerable victims of fermented fluids and eau-de-vie.

9. Eau-de-vie, when introduced into the empty *stomach* even in a very moderate dose, causes congestion, excites contraction of the organ, and augments the secretion of the digestive juices. These direct effects,

which are much less pronounced when the stomach is filled with food, are, moreover, slight, and disappear without leaving any trace whenever the introduction of eau-de-vie is a casual occurrence. But if this occurrence be repeated frequently, and especially if it should become habitual, the congestive redness is more intense and more persistent, and irritable inflammation is developed, the digestive juices become scanty, and are replaced by a fluid secretion which is more hurtful than useful in the process of digestion; then, at length, the inflammation is followed sometimes by ulceration, at others by thickening and induration, which by paralysing the movements of the stomach and arresting its normal secretions, render this organ incapable of taking part in the processes of digestion. Corresponding with these anatomical conditions is a succession of bad symptoms, such as a sensation of heat or burning at the pit of the stomach, the expulsion by vomiting, in more or less abundance, of fluids which are sometimes tasteless, at others of an acid or acrid taste, loss of appetite, a sluggish digestion; at a later stage the gastric pains extend to the region of the ribs at the back, and differ much in intensity and nature, from a slight stitch or a sensation of weight to the most intense tearing sensations; in short, there are digestive disturbances of increasing gravity, and capable in themselves of causing death by exhaustion, with or without an alternate complication of pulmonary phthisis or cancer.

10. The immediate effects of alcohol on the stomach by no means exhaust its action; the greater part of the fluid is absorbed by the veins, and is carried by the circulation to exert a serious influence upon the whole organism, and espccially on the brain, the liver, the lungs, and the kidneys.

11. The brain of all the organs is, as every drinker knows, the one which feels most severely the action of alcohol. Experiments on living animals have, moreover, demonstrated that the nervous tissue is that of all others which retains and stores up the largest proportion of alcohol.

12. Alcohol, when brought into contact with the cerebral structure by the small blood-vessels, excites the functions of the brain, and this excitation, the degree of which bears a relation to the proportion of alcohol absorbed, manifests itself in passing through all the stages of drunkenness, at first by a joyous condition, which is nearly always one of good temper, to which soon succeeds incipient babbling, with a morbid tendency to move in the same circle of ideas; the gait, which at first was very alert, and the pace of which seemed to defy all fatigue, then becomes less steady; the state of gaiety is then followed by a certain degree of irritability, which almost always accompanies an irresistible disturbance of the head. From this moment the aspect of the scene is completely changed; there is not only excitation, but a perversion of ideas, a veritable delirium more or less quarrelsome, more or less violent, which sometimes verges on incoherent verbiage, and a condition of extreme agitation, and at others degenerates into a crisis of blind fury in which the individual becomes capable of any crime, the horrible eventualities of which he usually avoids because, exhausted by the very excess of the excitation to which he is a prey, he falls into a state of prostration and becomes an inert mass—a man *dead drunk*.

13. When excesses of this kind are repeated with short intervals

they inevitably result in an attack of acute alcoholism, well known by the name of delirium tremens, a special delirium of drinkers, which by itself may cause death. But when the action of alcohol, even without passing beyond the first stage of slight excitation, is repeated daily, the slight disturbance of the nervous tissue produced at first by this excitation is gradually succeeded by material lesions from diffuse more or less generalized and more or less persistent congestion of the brain to softening. And then it is not by a joyous effervescence nor by attacks of fury that these disorders are revealed, but by persistent pains in the head, by vertigo, at a late period by hallucinations, by gradual weakening of the intellectual and moral faculties, by diminished mental activity, by loss of memory, by embarrassment of speech, by incessant trembling of the limbs, by temporary attacks of delirium—sometimes calm, at others agitated—and frequently alternating with attacks of epilepsy, especially if the drinker has habitually indulged in absinthe; finally, by lunacy, imbecility, and paralysis, which have often been long preceded by sterility, or absolute loss of power. There are drinkers who, before declining to this last degree of brutality, are kept by the repeated use of alcohol in a permanent state of excitement, the first effect of which is to render them really irritable and quarrelsome, and who at last gradually lose all sense of duty, and, overcome by the detestable passions which the abuse of alcohol has roused in them, ruin or dishonour their families by disorders or crimes for which they are convicted and punished.

14. Alcohol acts on the *liver* as on the brain, by causing congestion; this congestion, as slight as that of the nervous tissues when the action of the alcohol has been quite casual, is often succeeded, when the consumption of alcoholic drinks has become copious and continuous, by veritable inflammation, leading in some instances to suppuration, as has been observed, especially in hot countries; in other instances, and this most usually occurs, to an increase in the size of the organ with or without induration, sometimes finally to degeneration, either fatty or fibrous (cirrhosis) of the normal tissue. To the drinker all these disorders are announced by digestive disturbances very analogous to those caused by the direct action of alcohol on the stomach. They are usually less painful, it is true, but are complicated by jaundice and dropsy, and aggravated in the last stages by all the agonies which precede death, when the heart and lungs have been compressed by the dropsical fluid collected in the abdomen.

15. The surface of the *bronchi* is probably the most extensive seat of the elimination of alcohol; every one knows how much the breath of drinkers is impregnated with the spirit; but though it is readily expelled by the *lungs*, alcohol, whilst passing through organs so vascular as these, causes their congestion, and induces an extreme tendency in them to become inflamed when, in consequence of repeated excesses, they are frequently submitted to its action. Thus may be explained the dry, tearing, and obstinate cough of most drinkers, and the frequent occurrence among them of fluxion of the chest and of acute or chronic bronchitis, with or without consecutive phthisis, but almost always complicated with disease of the heart.

16. It is important not to forget that diseases of the heart—so

painful in all their stages in consequence of the oppression which they cause and which always terminate either in sudden death or in general dropsy—may be suddenly produced under the influence of alcoholic excesses, the internal membranes of the heart and the vessels being no less exposed than other tissues to the irritant action of alcohol.

17. In traversing the kidneys, which reject it rapidly, and to a great extent decomposed with the urine, alcohol excites the functions of these organs; it is a well-known fact that an alcoholic drink causes more urine to flow than an equal quantity of pure water. If this irritation be repeated frequently the tissue of the kidneys, like that of the brain, the liver and the lungs, becomes congested and inflamed, and at the same time pain is felt in the region of the kidneys and pus and blood are passed in the urine. These symptoms are often complicated with those of catarrh of the bladder and of inflammation of the prostate, affections which, in consequence of the retention and incontinence of urine and of the series of necessary painful operations, cause the life of the unfortunate being condemned to all these miseries in consequence of alcoholic excesses to be a frightful punishment, which is often abridged by *suicide*.

18. In addition to these numerous affections, there are still others, less formidable, generally speaking, but yet serious on account of some of their remote consequences, and these one ought also to attribute to the action of alcohol. In one drinker this action is manifested by the frequent appearance of *furuncles* or even of *anthrax;* in another by simple eruptions of pustules disseminated over the body (acne, eethyma), by persistent redness of the face, by more or less rebellious forms of dartre (eczema, lichen); and in a third drinker by a tendency to the production of an excess of lithic acid (red and brick-dust urine), the accumulation of which almost certainly causes *gout* and *gravel*, and is often followed by *stone*.

19. Thus the abuse of alcoholic drinks engenders many maladies; but before it has even produced all these material disorders and disturbances of health, it has already had the effect of rendering the consumers of these drinks more accessible to the action of causes which give rise to casual affections, of aggravating these affections, and of compromising in a most serious manner the cicatrization of wounds and the successful results of operations which may have been performed on drinkers.

A. *Internal Maladies.*—Epidemic diseases, such as *variola*, *typhoid fever*, *dysentery*, and *cholera*, rage by preference amongst drunkards. With cholera in particular all statistics show that the number of admissions into hospitals has always attained its maximum on Tuesday and Wednesday—that is to say, on the two days which follow that of excessive libation.

In drunkards all acute maladies have a remarkable tendency to become complicated by delirium, which is always agitated, often very furious, and which by its violence places the patient in danger of death, and in all cases renders recovery more difficult and convalescence more prolonged. Fluxion of the chest is undoubtedly the affection which in drinkers is the most frequently aggravated by this delirium. With regard to other acute maladies, it is certain that this course is disturbed by the condition of congestion caused in all tissues by the penetration

of alcohol; it will suffice to mention, in support of this assertion, the slow progress of acute catarrh of the bronchi and of the intestines in drinkers. In chronic maladies the development of which is not due to the direct action of alcohol its influence is less easy to establish; but it is well known how rebellious are chronic catarrh of the bronchi and dartrous affections in drunkards.

B. *Surgical Maladies—Accidental or operative traumations.*—It is made out daily by surgeons that drunkenness is the immediate cause of a great number of bad symptoms, and that alcoholism exercises the most serious influence on the progress of wounds.

Whether intoxicated or merely excited by alcohol, the most gentle and sensible man becomes for the time quarrelsome and a swaggerer—hence bloody contests or perilous tricks. The same cause singularly augments the dangers inherent to certain professions, which may be avoided or overcome without trouble by skill and coolness, but which cause the man rendered imprudent, weak, or clumsy by drink to become a victim.

Drunkenness is to the surgeon a source of numerous embarrassments, which sometimes render the diagnosis troublesome and the treatment difficult or inefficacious. It may interdict the opportune employment of a useful plan of treatment, may necessitate the postponement of an urgent operation or the use of violence, and may force the practitioner to treat his patient as a veterinary doctor does the brute.

Inveterate alcoholic poisoning has consequences which are still more formidable: a small wound, without danger in a sober and healthy man, often in a drinker becomes the starting point of terrible symptoms which art is powerless to remove.

Agitated by fever, tormented by thirst, and having an insurmountable dislike for nourishment, the wounded drinker refuses or rejects reparative aliments, which are so useful in the treatment of injuries, and soon presents symptoms of intestinal embarrassment and the consequences of a forced diet. The antecedent bad state of the principal organs, as the liver, kidneys, and lungs, is still more aggravated, and favours the development of internal complications. The reparation of the mischief caused by the wound requires pure blood and the regular concourse of all the nutritive functions; with altered blood, and a profound disturbance of the functions cicatrization is rendered difficult or impossible. Thus one may observe numerous complications at the seat of the wound. The sores take on a bad appearance, they become painful and inflamed, and are covered by putrefied débris or pus of a bad kind. Phlegmon, erysipelas, and gangrene may manifest themselves, and the already altered blood takes up terrible poisons, which soon complete the work of destruction.

20. Finally, not only does the drinker ruin his health, but he also compromises in advance that of his descendants. In many *scrofulous* and *phthisical* patients the malady which affects them has for its original cause alcoholic excesses on the part of the parents.

21. It will not suffice to make known all the evils produced by the abuse of alcohol; it is further necessary to indicate the circumstances which, in the use of fermented drinks and of eau-de-vie, are the most concerned in favouring the production of those evils.

22. In the first place, that there is one fact which ought to be loudly proclaimed and not be forgotten, for if everyone has been made aware of it, everyone seems to have forgotten it; this fact is, *that every alcoholic drink—wine, beer, cider, eau-de-vie, or liqueur—when it has been taken between meals, acts much more rapidly and with much more energy upon the organs, especially upon the brain and stomach, than when it has been mixed with food.* The immense majority of cases of acute or chronic alcoholism is due to the unhappy custom which at the present day has so many followers in all classes, and which consists in using, either in the morning or before the evening meal, wine, or pure alcoholic drinks, as eau-de-vie or liqueurs. It is to this pernicious custom, and to its rapid progress during the past twenty years, that one must attribute in part the physical and moral debasement from the sad effects of which France so seriously suffers.

23. From its composition (*water, sugar, alcohol, ether, tannin, and salts*) wine, when diluted with two-thirds of water, forms the best drink to be taken during a meal. A man engaged in manual work, necessitating sustained efforts can, without inconvenience, consume a litre of wine daily. Beyond these conditions of labour from forty to fifty centilitres will suffice. But when pure wine is taken between meals or early in the morning it may by itself give rise to all the symptoms of chronic alcoholism.

24. The greater part of the beer and cider generally consumed contains such a diminutive proportion of alcohol that these drinks can hardly give rise to symptoms of acute or chronic alcoholism. On the other hand, as they respond through the principles which they contain (*water, alcohol, sugar, bitter principles, salts*) to the various wants which require to be satisfied at a meal, it may be said that they present the qualities of a good drink, but one, however, which is inferior to wine which produces the same useful effects in smaller quantity, without even distending the stomach and engorging the venous system with fluid.

A pint of beer or of ordinary cider at a meal is sufficient for a labourer. Without profit, then, to their health do the rustics and labourers in the north and north-east provinces of France swallow at their meals enormous quantities of beer and cider. But to the great detriment of health there has been established a custom in these provinces, among both women and men, of adding to their ordinary beverages, or of drinking without mixture, considerable quantities of eau-de-vie, with the sole object of obtaining from this liquor a cerebral excitement which beer and cider have no power to produce.

"25. It is indeed in the form of eau-de-vie or of liqueur that alcohol produces the greatest ravages in populations. Formerly the labourer, in country and in towns, drank in the early morning, under the pretext of neutralizing the effects of the moist and damp, nothing more than a glass of pure wine, which was more frequently white than red, purely because white wine excites the brain with greater rapidity. In this custom there was a serious danger, but after a time white wine no longer sufficed, and it was (owing chiefly to the low price of alcohol) replaced, in towns at least, by a liqueur which caused the wished-for excitation more speedily and in a higher degree. At the present day even this liqueur, which, in consequence of the essential oil and of the sugar

which it contains, gratified the palates of the drinkers more than common eau-de-vie, has become too insipid, and now most labourers consume in the morning on empty stomachs—that is to say, under conditions most favourable to the absorption of alcohol—a pernicious beverage which is called *le mêlé*, which consists of oil of aniseed, or of liqueur of mint added to a large proportion of alcohol.

26. The use of this mixture is quite sufficient to produce chronic alcoholism; but the use of *liqueur d'absinthe*, which of late years has spread so rapidly from the army to the civil population, is still more pernicious, not only because it contains a higher proportion of alcohol than other liquors, and it is always taken before a meal, but especially on account of the special property which the extract of absinthe possesses of causing attacks of epilepsy.

Art. 4.—*On the Morbid Effects of Alcohol as shown in Persons who Trade in Liquor.**

By W. H. Dickenson, M.D. Cantab., F.R.C.P., Senior Assistant-Physician and Lecturer on Pathology, St. George's Hospital.

(*The Lancet*, November 2nd.)

The paper is a contribution to the morbid anatomy of alcoholism founded upon a comparison of post-mortem appearances between persons trading in liquor and persons occupied independently of it and not known to have been drunken. The assumption that people who get liquor for nothing drink more than those who have to pay for it is, the author said, justified by the common tendency of mankind, as well as by the notorious inebriety and liability to delirium tremens of potmen, waiters, cellarmen, draymen, brewers, barmen, and publicans—the chief members of the liquor-trading class. The paper is based upon an analysis of the post-mortem and case books of St. George's Hospital for a period of thirty years. This comprised the particulars of the examination of the bodies of 149 traders in liquor. For comparison there were taken from the same source the same number of examinations of persons otherwise and very variously employed, chosen by rule, so as to afford a fair standard. The full details were tabulated and laid before the Society. Tabular abstracts, representing the condition of each organ in the two classes, were incorporated in the paper, the general conclusions of which were thus summed up:—

"Alcohol causes fatty infiltration and fibroid encroachment; it engenders tubercle, encourages suppuration, and retards healing; it produces untimely atheroma, invites hæmorrhage, and anticipates age. The most constant fatty change, replacement by oil of the material of epithelial cells and muscular fibres, though probably nearly universal,

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* Read at a meeting of the Royal Medical and Chirurgical Society, October 22nd.

is most noticeable in the liver, the heart, and the kidney. The fibroid increase occurs about the vascular channels and superficial investments of the viscera, where it causes atrophy, cirrhosis, and granulation. Of this change the liver has the largest share; the lungs are often similarly but less simply affected, the change being variously complicated with, or simulative of, tubercle; the kidneys suffer in a more remote degree. Alcohol also causes vascular deteriorations which are akin both to the fatty and the fibroid. Besides tangible atheroma there are minute changes in the arterial walls, which show themselves by cardiac hypertrophy and cerebral hæmorrhage. Drink causes tuberculosis, which is evident not only in the lung but in every amenable organ. Drink promotes the suppurative at the expense of the adhesive process, as seen in the results of pneumonia, of serous inflammations, and of accidental injuries. Descending from general conditions to the individual organs, the effect of alcohol upon the nervous system must be looked upon as special, and taken by itself, apart from changes which, like delirium tremens, are more evident during life than after death, the brain pays a large reckoning in the shape of inflammation, atrophy, and hæmorrhage. With regard to the other organs, they are damaged by alcohol much as they stand in its line of absorption. Next to the stomach the liver suffers, by way of cirrhosis and fatty impregnation. Next the stress falls upon the lung, taking every shape of phthisis. A large share in the pathology of intemperance is also taken by the arterial system, as seen in its results—atheroma, cardiac hypertrophy, and hæmorrhage. Lastly, the kidneys, more remotely exposed, have a smaller participation in the common damage of alcoholism. They undergo congestive enlargement, fatty and fibroid change, but they do not suffer commensurately with the blood-vessels, or as frequently as the other viscera.

"So far we have seen only the evil which alcohol produces. It may be asked, Is there none which it obviates? Apart from its medicinal action, which the evidence before us does not touch, has it no *per contra* of prevention? It is not easy to answer this inquiry. Some active inflammations, such as pneumonia and endocarditis, are diminished in the alcoholic trades; but it must at once be seen that the increase of the alcoholic disorders must necessarily cause an apparent diminution in all which are unaffected by this agent. A man may be saved from pneumonia or acute rheumatism, not because alcohol is antagonistic, but because it kills him prematurely in another way. He can die but once. Therefore, though under alcohol some forms of disease are comparatively infrequent, we must use much caution in concluding that it has a directly preventive influence. Nevertheless it may be laid down as an axiom that any drug which can do harm can do good. Disease is most various, and may, or rather *must*, represent contrary conditions. It may be positive or negative, plus or minus. Too much or too little of any of the shapes of heat, food, and work may spoil the equipoise of health. If a drug promotes one change it may prevent its opposite. Alcohol certainly gives an asthenic type to disease. Although we cannot as yet say that it defibrinates, yet it retards adhesive and plastic processes. This influence may be beneficent if it hinders the development of acute inflammation and obviates the formation of coagula

where, as in acute rheumatism, the process is harmful. It is possible that by some such antagonism we may explain the remarkable paucity of endocarditis in the alcoholic series. But, at the best, the protecting is less certain and less effective than the deteriorating influence. In brief and final enumeration, alcohol replaces more actively vital materials by fat and fibrous tissue; it substitutes suppuration for new growth; it promotes caseous and earthy change; it helps time to produce the effects of age; and in a word, is the genius of degeneration."

Art. 5.—*On the Pathology of the Lesions produced by Emboli.*

By Dr. R. Lépine.

(*Gazette Médicale de Paris*, No. 23, 1872.)

Complete and final as the clinical history of embolism seems to be, and although at the present day it is supported by a considerable number of carefully observed facts, still the pathological physiology of the lesions produced by an embolus are not free from obscurity. Why, for example, does it produce in some instances gangrene, in others hæmorrhagic infarctions, and in others again abscesses? Virchow, it is true, has insisted upon special qualities which may belong to certain coagula, and which may be found in the foci from which these coagula are formed. In this way he explains the development of pulmonary abscesses or gangrene, following gangrenous or septic lesions in different regions of the body. The clot formed in the veins of one of these regions when it has reached the ramifications of the pulmonary artery at once sets up disorders differing in their nature from those excited by a small piece of elder-pith or of caoutchouc; instead of simple circulatory disturbances there is a special inflammation which controls the pathological processes.

But Virchow's explanation is evidently insufficient, as it does not account for the predilection of this or that kind of lesion for certain organs. In the limbs the almost constant result of embolism is simple gangrene; in the spleen and lungs, in addition to abscesses, one almost always finds hæmorrhagic infarctions, which again are never found in muscles and glands, although the existence of embolic abscesses in these organs proves clearly that they are not exempt from emboli.

Professor Cohnheim, whose important memoir on inflammation has contributed so much to reform views previously held with regard to the formation of pus, has endeavoured to solve the problem just stated, and to determine the conditions which preside over the development of this or that lesion.

In this, as in preceding researches, Professor Cohnheim has turned to experimentation and direct observation. In order to follow, step by step, the effects of embolism the structure chosen was the frog's tongue laid out under the microscope. The first result of the plugging of a lingual arteriole with a minute piece of wax was acceleration of the cir-

culation in collateral vessels; the current of blood, finding the passage closed, passed into the channels which remained free; the rapidity of the current was increased, not only in the collateral arteries, but also in the continuous capillary vessels and vesicles. Above and below the obstacle the blood remained at rest, as well as in the capillaries and veins (as far as the collateral branches) belonging to the obliterated artery.

But if between the plug of wax and the capillary vessels there should exist an arterial anastomosis, however small, this soon dilates, and in a short time afterwards the circulation is re-established in all the capillaries. The course of the blood is diverted, an arterial trunk is suppressed in consequence of the obstacle, but no bad consequences ensue.

If there be no anastomosis, and if the obliterated artery be a *terminal* one (Professor Cohnheim proposes this designation for the sake of abbreviation), one may observe in the contents of the vein a rhythmical forward and backward movement, commencing at the point of insertion of the first collateral vessel; this movement is propagated along the capillaries and the artery as far as the seat of obliteration. In the course of a few hours this vascular region presents a condition of engorgement visible even to the naked eye.

The explanation of this is simple: below the plug the pressure is at zero; in the vein corresponding to the collateral vessels it is, on the contrary, positive, although feeble. Then there is a tendency for the venous blood to flow into the inferior portion of the artery, in order to restore the equilibrium of pressure. Well-formed valves would prevent this movement, but in the lingual veins of the frog these organs are too slight to be capable of opposing the reflux of blood.

To this state of engorgement there is added on the third or fourth day small extravasations of red blood corpuscles, which are deposited here and there around the capillaries. It is impossible to explain these by the view of excessive pressure; moreover, there occurs an extravasation of blood corpuscles without any issue of the blood-plasma, which would certainly be effused before the corpuscles in case of augmented pressure. Professor Cohnheim thinks that the defect in irrigation by the arterial blood has an unfavourable influence on the properties of the walls of the capillary vessels, which become incapable of returning the blood, even when they seem to be morphologically intact.

For the purpose of confirming this view Professor Cohnheim made the following experiment: he ligatured the frog's tongue in such a manner as to prevent altogether any circulation in this organ; at the end of a certain period he removed the ligature.

In instances where the ligature had been allowed to remain for only a few hours the current of blood became perfectly re-established. When the ligature had remained for more than forty-eight hours, together with the re-establishment of the circulation (besides the issue of numerous corpuscles from the veins) there was a diapedesis of red corpuscles from the capillaries. The capillaries of the lungs and intestines develop changes at an earlier period. These give rise to hæmorrhages when they have been deprived of the circulation for thirty-six hours. For the capillaries of the external ear of the rabbit less than twenty-four hours suffices. Finally, if in the rabbit the ligature be allowed to re-

main for only six hours hæmorrhagic infarction of the testicle occurs shortly after the removal of the ligature. A similar lesion may be produced in the ear of the guinea-pig by allowing the ligature to remain for two hours.

Art. 6.—*On Fluid Effusions of the Pleura.*

By Dr. C. Méhu.

(*Archives Générales de Médecine*, Juillet, 1872.)

In pleuritic effusions the quantity of mineral salts is almost constant, and always independent of the richness of each fluid in albuminous material. This rule applies to all the serous fluids of the economy (hydrocele, ascites, hydrarthrosis, hygroma, ovarian cyst). Each kilogramme of fluid contains from seven and a half to nine grammes of anhydrous mineral salts.

Fibrine is present more particularly in acute pleurisy (mean quantity equals 0·423 gramme); but it also exists in cases in which the thoracic effusion is the result of obstructed circulation in the heart or in the large vessels, where, however, it is in small proportion (mean equals 0·149 gr.).

Fibrine is absent in purulent fluids and in the effusions excited by the presence of heterologous products (tubercle, cancer).

If the weight of the dry residue does not attain to 50 grammes for each kilogramme of fluid, it may be concluded that there was an obstruction to the circulation of the blood in the heart and large vessels, and that the effusion was due to this obstruction (cardiac affections, cirrhosis).

If the weight of the dry residue left on evaporation exceeds 50 grammes (mean equalling 65 grammes, the lowest quantity 58 grammes), and if the fluid after operation becomes a more or less consistent mass, it may be concluded that the case is one of acute pleurisy. The higher the proportion of fibrine the more rapidly does the patient recover; a single puncture is generally followed by a cure.

When, on account of the condition of the patient, several successive punctures are required, the proportion of fibrine goes on increasing if the disease should tend towards cure. On the other hand, the fibrine becomes reduced very much in quantity, or is altogether absent when the disease has a tendency to increase in severity.

Practically, by the bedside, it may be concluded that every pleural fluid which has a specific gravity above 1·018 at a temperature of 15° C., and which gradually becomes a more or less consistent mass, is due to a free acute pleurisy, which will be the more rapidly cured as the coagulum is more dense.

Every pleural fluid which has a specific gravity below 1·015 at a temperature of 15° C. indicates that the effusion is dependent on an obstruction to the circulation of blood in the heart or in the large vessels. The case is then one of hydrothorax. The prognosis depends here on the primary lesion, which is usually more serious than the effusion itself.

Every pleural fluid which, with a specific gravity 1·018, contains no

fibrine, indicates a lesion of the pleura due to the presence of an heterologous product (cuticle, cancer), the lesion in most cases being very serious; the presence of a fluid of this kind renders the prognosis very unfavourable.

Art. 7.—*On Hydatid Cysts of the Anterior Wall of the Abdomen.*

By Dr. Moutet.

(*Montpellier Médical*, 1871; *Gazette Hebdomadaire*, No. 18, 1872.)

M. Moutet has described, under the name of hydatid cyst of the anterior abdominal wall, one of the varieties of encysted hydropsy; he separates the cysts which, arising in the peritoneal cavity from the interior of a viscus, finally project externally, and elevate a portion of the abdominal wall; and he reserves the name preperitoneal hydatid cysts for those growths which, originating in front of the parietal layer of the peritoneum, do not co-exist with other tumours of the same nature developed at other parts of the subjacent cavity.

The author has collected eight cases of this kind of cyst, seven from the practice of Boudet, Roux, Leidy, Degner, Courty, Anhorn, and Decieux, and a remarkable one which came under his own observation. From these data he has been able to form a clinical exposition, of which the following are the most interesting parts:—

The favourite seat of hydatid cysts is the umbilical region and the surrounding parts. The original seat of their growth cannot always be readily determined; still it is probable that two varieties in this respect may be admitted, one in which the cyst is developed in muscles, the other in which the initial seat of the new growth is in the cellular tissue. The cysts are usually isolated, and are rarely multilocular; they undergo an enormous development. The number of vesicles in their interior may amount to thousands, and the quantity of fluid to several litres—in some cases to twelve or fifteen. These hydatids enter into the category of those that are destitute of echinococci. With regard to the chemical composition of the contained fluid, M. Moutet has made out that there is a slight proportion of albumen (2 parts in 100).

The symptomology has been studied very elaborately; it is briefly summed up by M. Moutet in the following table:—

"A tumour making its appearance in the anterior abdominal region without having been announced by any general cause, or any pulmonary local modification. Its growth is attended with lingering pains, which either affect a circumscribed portion of the abdomen or occupy the whole of its surface. At first it is more or less irregular on the surface, but afterwards becomes regularly rounded and produces extreme distension of the skin, yet without causing any œdema in the cellular tissue nor any varicose dilatation of the subcutaneous veins. It is elastic, and its limits can be more or less readily made out by palpation. On percussion it gives a dull sound, the seat of which undergoes no modification with changes of position. The tumour is a fluctuating one, and transmits to the finger a peculiar quaking sensation. The

affection does not give rise to any marked respiratory or digestive disturbances, but causes general malaise; neither the appetite nor the urinary secretion is interfered with, and no arrest is caused of the venous circulation except at an advanced stage. The tumour generally co-exists with all the appearances of good health; it is very slow in its growth and resists the action of all resolvent agents. Such is the collection of characters with the aid of which one may expect to be able to recognise this affection with certainty.

"Of all these signs one only has a special value; this is the hydatid *frémissement;* its absence, however, is very frequent. It should be added that though the presence of this symptom may render clear the nature of certain abdominal tumours, it has no value in the determination of their exact seat. From this point of view it would become the source of veritable confusion, seeing that intra-abdominal cysts may also contain vesicles; consequently, it often becomes necessary to have recourse to a more expressly demonstrative proof. Sometimes one may be able to examine directly the contents, as after rupture, or by practising an exploratory puncture. But the latter may be followed by serious symptoms, and ought not to be heedlessly attempted. The diagnosis presents numerous difficulties; it is only after a very serious examination that one can differentiate these abdominal cysts with fluid collections, especially cysts of the ovary and ascites and intra-abdominal hydatid cysts. It is chiefly in vaginal and rectal examination that one will find the most positive differential signs.

"The treatment of this affection is necessarily surgical; in three out of four cases incision of the cyst gave very favourable results. Simple puncture is quite insufficient. M. Moutet is in favour of incision of the sac with a bistoury, complete evacuation of the contents, washing out of the cyst with detersive or disinfectant solutions, and at a later period injections containing iodine."

Art. 8.—*On Wide Daily Range of Temperature in connexion with Vegetations on the Mitral Valves (Rheumatic Disease) and Separation of the Spleen.*

By James Andrew, M.D., F.R.C.P., Physician to St. Bartholomew's Hospital.

(*The Lancet*, June 22nd.)

At a Meeting of the Clinical Society of London on May 24th Dr. Andrew read a paper "On wide Daily Range of Temperature in connexion with Vegetations on the Mitral Valves (rheumatic disease) and Separation of the Spleen." Wm. Henry C——, aged sixteen, was admitted into Victoria-park Hospital, under the care of Dr. Andrew, on October 27th, and died on December 6th, 1871. He had had a severe attack of rheumatic fever two years previously, and had never been well since; he had a slighter attack three weeks ago. On admission he had still pains in the hips; was very pale and thin; pulse 120; tongue coated. His appetite was bad, and he was thirsty. The

bowels were confined. He had a slight hacking cough. The dyspnœa was generally worse at night. The urine was of specific gravity 1020, containing a trace of albumen, which was never again found. The lungs were normal. The heart was greatly hypertrophied. A blowing systolic murmur, loudest at the apex and towards the axilla, was also heard posteriorly. The liver was slightly, the spleen greatly, enlarged. For the first ten days after admission the evening temperature ranged from 103° to 105°, the morning temperature from 98° to 101°. He had a slight attack of tonsillitis, and for two days the temperature remained at 103-104°. After this the daily variation returned and gradually diminished, the minimum rising and the maximum falling; on the whole, however, the mean temperature was somewhat increased. On December 1st the temperature began to fall, rising again for a few hours on the 4th. On the 6th, an hour or two before death, it was only 94°. At the post-mortem examination nothing was found except the disease of the heart and of the spleen, with one or two small fibrinous wedges on the kidneys also. The spleen grew larger for some time after admission, the gradual diminution in the daily variation of temperature coinciding with the subsequent gradual decrease in its size. The microscopical examination of the blood showed no increase of white corpuscles, but a pale, shrivelled state of the red discs. The prominent features of the case were dyspnœa, without any physical evidence of pulmonary or pleural change, the extreme anæmia and muscular weakness, the constant drowsiness, and the absence of rigors and of any form of delirium. He seemed to die at last from cold.

Art. 9.—*On the Etiology of Tuberculosis.*

By Dr. Damaschino.

(*Thèse de Paris*, 1872; *Archives Générales de Médecine*, Octobre, 1872.)

The author studies in the first place the somatic or internal causes, and then the external causes; he next examines the question in its experimental aspects; and finally investigates the relations of tuberculosis with other morbid conditions—relations of affinity, relations of antagonism.

Age affords no immunity; neither of the two extremes of age is free from tuberculosis. Age has no value save the mark it impresses on the course of the symptoms. It is in youth particularly that one sees those acute generalized tuberculisations with rapid course, which cause the death of the patient before the granulations have undergone any kind of degeneration. Adult and old age are more exposed to chronic consumption. No very great influence results from sex. Still, from very extensive tables, it appears that women are more frequently affected than men. The author agrees with M. Peter that the uterus goes for nothing in the etiology of tuberculosis, but that all depends on the social conditions of the woman.

From the contradictory opinions which have been given concerning the influence of pregnancy, the author concludes that there is nothing

to justify the view of a special action of pregnancy on tuberculosis. Gestation, he says, constitutes only a cause of debility of the organism. From the results of clinical observation and comparative pathology, he attributes an analogous influence to lactation.

Passing to the external causes, the author insists on the influence of confined air and of cold and dampness. In cities which have been rendered dry by means of drainage, the mortality of the inhabitants from phthisis has been reduced by one half. He points out the great influence of poverty; on this point the tables of Marc d'Espine are very significant: out of 1000 deaths among paupers, 232 were due to phthisis; out of 1000 deaths among well-to-do people the number of deaths from phthisis were sixty-three. According to M. Bertillon this disease affects 13 per cent. of rich people, and 33 per cent. of poor people. The author points out the truth of the following words of M. Pidoux: "The specific remedy of tuberculosis will be found, not in vaccination, but in the physical and moral amelioration of the masses." In considering alimentation, the author raises an important question: Is a person who makes use of milk supplied by a tuberculous cow, and is a child suckled by a phthisical nurse, exposed to the danger of contracting the disease? If the condition of clinical science does not yet justify one in giving an affirmative answer to this question, the experiments of M. Chauveau on the injection of tubercles causing tuberculous formation, will equally forbid a negative response. M. Damaschino has arrived at no certain conclusions on this point, but states that it is one of the highest interest with regard to hygiene and public alimentation.

No kind of climate seems to be free from tuberculosis: the influence which seems to be the most important is that of altitude. But a cause which the author regards as superior to climate and cosmic influence, is the degree of dissemination or condensation of a population on a given space; prevalence of phthisis bears a direct proportion to the number of cities. Nomadic peoples seem to be free from the disease.

The most novel and important point in the etiology of tuberculosis is probably contagion. Dr. Damaschino, who is a contagionist, mentions several facts which, though not unquestionable, are still of great value. According to Rush of Philadelphia, phthisis, which is now well acclimatized in America, was first imported from Europe. Dr. Livingstone has stated that the negroes of the interior of Africa do not suffer from phthisis in their own country, where the disease affects white people only. M. Damaschino does not fail to give the arguments of the opponents of contagion. It has been asked, how could the human race have resisted phthisis if this disease had been communicable? to which M. Villemin answered, that all horses do not suffer from glanders. It has been stated that the incubation of phthisis would take a long time; the fact is that, excluding hydrophobia, we know of very few diseases the incubation of which lasts long. By the term inheritance has been explained the disappearance, through phthisis, of those groups of families which might have been regarded as victims of contagion; it is as difficult to explain the occurrence by the one as by the other view. Still, as Dr. Damaschino holds, all the negative facts are insufficient to destroy a single well-proved positive fact. Contagion being proved, what is the agent? It is supposed to be the tuberculous matter itself—

the expectorated matter, the breath of phthisical patients ; finally, there is a mode of contagion from the husband to the wife through the fœtus, this is what M. Gubler regards as a kind of slow inoculation.

Finally, after having treated of contagion, the author arrives at the important subject of inoculation. We will not enter here into the recital and analysis of those facts which are now generally known ; not only do both inoculations of tuberculous granulations, cheesy material, and tuberculous expectorated matter give rise to the development of tubercles, but also inoculations of pus, of cancerous material, and of various other agents. The success attending injections made with different substances, and which yet almost always gave rise to tuberculosis, destroyed the theory of specificity. The single element which was common to all these experiments, viz. traumatism, will explain all. The intestinal canal, which acts without traumatism, and physiologically by absorption, had already served to produce a vaccinal eruption in a foal into which M. Chauveau introduced nine centimetres of vaccinal virus, diluted in a quarter of a litre of water. This skilful experimentalist tried a similar proceeding with thirty grammes of tuberculous material, which he made a healthy cow swallow. The cow became tuberculous.

When, on the other hand, M. Chauveau made use of the same means with different phlogogenous substances, and with pus, he did not succeed in exciting tuberculous processes. Finally, when M. Chauveau injected tubercle and pus, not in masses, but in filtered solutions, tubercle alone produced tubercle. Once, by injecting under the skin a few drops of very irritant pus, this physiologist succeeded in producing some curious nodules in the lungs. The material extracted from these nodules was inoculated on a calf, and at the same time the animal was inoculated with tuberculous material. The first inoculation gave rise only to an inflammatory swelling ; the second to a persistent tuberculous deposit. Thus, says M. Damaschino, tubercle consists in a special entity ; it seems to possess a specific virulent agent, like the viri of variola, glanders, and syphilis, and may be inoculated in all forms, in the condition of miliary granulations, as variolous material, in the blood and expectoration.

With regard to the affinity of scrofula and tuberculosis, the author looks upon tuberculosis as the natural manifestation of the scrofulous temperament. The relations of tuberculosis to the herpetic diathesis are much less intimate, according to his views. Gout and rheumatism are not antagonistic to tuberculosis, but the coincidence of these affections is very rare.

Maladies of the digestive organs act by causing debility of the organism, and so preparing it for the development of phthisis. Diabetes and mental alienation act in the same way.

The eruptive fevers often precede tuberculosis; rubeola ought to be placed in the first rank and scarlatina in the second; hooping cough takes at least the same place as rubeola. Willis has called it "vestibulum tabies." There is very little antagonism between typhoid fever and intermittent fever on the one hand, and tuberculosis on the other. These assertions, however, do not seems to be supported by unquestionable proofs.

Art. 10.—*The Individuality of the Sympathetic Nerve.*

By Professor Schiff and S. Lilienthal, M.D., New York.

(*New England Medical Gazette*, July.)

From a translation of Professor Schiff's paper on "The Individuality of the Sympathetic Nerve," by Dr. Lilienthal, of New York, it is proven that the division of the medulla oblongata produces the same manifestations as the division of the cervical part of the sympathetic, and that therefore the medulla oblongata is the original point of these manifestations. He also tries to prove by experiments, that the origin of the vaso-motoric activity ascribed to the sympathetic, may be continued into the cerebro-spinal central system. He positively denies the influence of the sympathetic on the cardiac muscles, and asserts that the peristaltic motions of the bowels are modified by the spinal cord, according to the mode of irritation, when the dorsal portion of it is irritated. This influence ceases after division of the splanchnic nerve. Schiff considers nutrition a chemical process, in which the influence of the nerves is indirect, and limited to the activity of the blood-vessels. Secretion takes place in many glands under the influence of spinal nerves; in other glands secretion is stopped under the influence of the sympathetic. In such a case the nerve fibres producing a contraction of the blood-vessels emanate from the sympathetic nerve; those acting in dilatation of blood-vessels, from the central nervous apparatus. As both originate in the medulla oblongata, it may be taken for granted that here also the sympathetic acts only as a conductor of the function exercised by the medulla oblongata. After showing that trophical processes are also under the influence of the animal nervous system, he produces cases where the vegetative nerve, the sympathetic, exercises the functions of the animal nervous system.

Art. 11.—*On Cerebro-cardiac Neuropathy.**

By M. Krishaber.

(*Gazette Médicale de Paris*, No 21, 1872.)

"I have collected a great number of cases of a hitherto undescribed nervous malady which affects an invariable type. This malady is characterised by four groups of constant symptoms; these are: 1. Sensory disturbances; 2. Disturbances of locomotion; 3. Disturbances of the circulation; 4. Secondary disturbances.

"To the sensory disturbances belong false or perverted conceptions, which may induce a condition very much resembling alcoholic intoxication but which never approaches to real delirium, the patient always retaining

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* Communicated to the Académie des Sciences, Paris.

the faculty of resisting by his reason the illusions from which he suffers. There are at the same time extreme hyperæsthesia of all the senses, and multiple and intense neuralgic pains.

"The disturbances of locomotion consist most frequently in the abolition of the sense of equilibrium, caused by vertigo and numbness; but sometimes there is paraplegia extending to complete resolution of the limbs; in other cases there is nothing more than paresis affecting all the muscles of the body. Occasionally there are involuntary impulsions, and the patient walks contrary to his will in certain directions. These various disturbances sometimes succeed each other in the same patient during the course of the affection.

"The disturbances of the circulation consist in such extreme irritability of the vascular system that the least movement excites an acceleration of the pulse by twenty, thirty, or even forty pulsations. There are, moreover, frequent and violent palpitations, which are either spontaneous or may be excited by the most insignificant causes. In addition to these movements of disorderly contraction of the heart, the radial pulse is small and most frequently slow and impressible. During the most intense period of the malady lipothymia frequently occurs, sometimes there is even syncope with complete loss of consciousness.

"To these disturbances is always added a sensation of precordial distress, which often increases to most acute pain, and then affects the form of angina pectoris.

"The invasion of the malady takes place rapidly; it is a veritable attack of the nervous system, the mode of appearance of which is instantaneous. The duration varies between two and four years, sometimes, though it may last much longer. I have reported a single acute case with very rapid course. The ordinary termination is in recovery.

"This affection sometimes presents itself with a very marked predominance of one of the principal symptoms; but it is always possible by seeking for the concomitant symptoms, to recognise the characteristic type.

"It affects two forms: one severe, the other slight. One invariable criterion distinguishes these: this is, the patient's sleep. In the severe form the patient at night is much agitated by insomnia, nightmare, hallucinations, and extreme over-excitement of the brain (always without delirium); in the slight forms the patients' rest is almost normal. Between these two extreme forms there are intermediate states. The affection is always the same, but it presents itself in very diverse degrees and intensity."

Art. 12.—*Dynamics of Nerve and Muscle.**

By Charles Bland Radcliffe, M.D., F.R.C.P.

The following is a summary of Dr. Radcliffe's conclusions:—

1. That the sheaths of the fibres in nerve and muscle are capable of being charged like Leyden jars, and that during the state of rest they are so charged.

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* London: Macmillan and Co. 1871.

2. That the sheaths of the fibres in muscle are highly elastic.

3. That the fibres of muscles are elongated during the state of rest by the charge with which their sheaths are charged; the mutual attraction of the two opposite electricities, disposed Leyden-jar-wise upon the two surfaces of the sheaths, compressing the elastic substance of the sheaths, and so causing elongation of the fibre in proportion to the amount of the charge.

4. That the muscular fibres contract when the state of rest changes for that of action, because the charge which caused the state of elongation during rest is then discharged, and because this discharge leaves the fibres free to return, by virtue of their elasticity simply, from the state of elongation in which they had been previously kept by the charge.

5. That "nerve influence" antagonises the state of action in nerve and muscle by helping to keep up the natural electrical charge which antagonises action.

Art. 13.—*On Chronic Saturnismus.*

By Professors A. Kussmaul and R. Maier, of Freiburg.

(*Archiv für klinische Medicin*, ix. 1872; *Schmidt's Jahrbücher*, No. 6, 1872.)

A house painter, aged thirty-five years, who for more than twenty years had worked with lead-colours, presented a pale yellow discoloration of the skin, was emaciated, and complained of dyspepsia, colic, constipation, and dysuria. He had towards the end of his life two well marked attacks of lead colic. He died jaundiced in the course of the second attack, having at first suffered from intestinal obstruction and bilious vomiting, and afterwards from profuse diarrhœa of thick fæcal masses, which at last were replaced by thin bilious stools. The vomiting and painful dysuria, brought on, after an enormously increased frequency of the pulse, collapse, and death; there was no abnormal elevation of temperature, and no paralysis nor symptom of cerebral affection were observed. On post-mortem examination the body was found considerably emaciated, and there was persistent rigor mortis of a high degree; there was some ieterus, the stomach was dilated, there had been chronic catarrh of the mucous membrane of the stomach, intestines and ductus choledochus, atrophy and fatty degeneration of the gastric glands, fatty degeneration of the muscular fibres of the stomach at the pylorus, atrophy of the mucous membrane of the jejunum ileum and upper portion of colon, both in the rarefied stroma and in the degenerated glands; the villi intestinales, Lieberkühn's glands, Peyer's patches and the solitary follicles were atrophied; to these lesions was added increased development of the submucous coat of the stomach and intestines produced through proliferation of the areolar connective tissue, thickening of the tunics surrounding the vessels, and extensive deposit of fat cells in the wide meshes of this coat. Besides these lesions were observed fatty degeneration of the intestinal muscular tissue, some pigmentary degeneration of the muscular fibres of the heart, slight peri-

arteritis at the surface of the cerebrum, proliferation and induration of the connective tissue septa of several sympathetic ganglia, viz., the cœliac and superior cervical ganglia, and induration of these organs with evidences of diminished circulation, and diminished quantity of their nervous cellular elements.

The dyspepsia in this case was undoubtedly owing to several causes. Firstly, the white lead inhaled during the patient's occupation formed with the gastric juice deposits of chloride of lead, and consequently rendered useless a portion of the digestive ferment; secondly, the constant contact of the mucous membrane of the stomach with particles of lead induced chronic gastric and intestinal catarrh; thirdly, because these processes go hand in hand with shrinking of the glands which secrete the digestive juices; finally, the atrophied condition of the villi caused a diminution of the chyle-absorbing surface, and the thickened and condensed state of the sub-mucous layer caused an obstruction to the flow of chyle into the lymphatics. These conditions in consequence of deficient microscopical examination were overlooked by Tanquerel des Planches, who in forty-nine cases noted considerable development of Brunner's glands and thickening, but never atrophy, of the intestinal walls (in cases of this kind Brunner's glands, though very large, may still have undergone fatty degeneration). It should not be forgotten however that atrophy of the stomach and intestine is very slowly produced and so can be observed only in prolonged cases of saturnismus (in the subject of the above report the affection had lasted for twenty years). Here colic, terminating in death, came on at a late period, after lead had for a long time exerted its injurious influences upon the intestinal tract, and after emaciation and occasional inability to work; whilst this symptom of colic in other cases shows itself early, and is repeated so frequently that it kills the patient, or may compel him to suspend his occupation for so long a period as may be sufficient for his recovery and the restoration of the affected digestive apparatus. Saturnine dyspepsia and colic, although the former generally precedes the latter, are by no means genetically dependent symptoms, and the post-mortem appearances are not inconsiderably modified, as one or other of these is more prominent. Probably the thickening of the sub-mucous layer of the intestines was the cause of the atrophy of the glands and villi, as proliferation of the connective-tissue and thickening of the arterial sheaths must give rise to diminution of the lumen of the vessels and deficient nutrition—consequently, atrophy of the portions of intestine supplied by the vessels thus affected.

The authors attribute the habitual constipation met with in the patient to atony of the intestinal muscular structure, and to diminished secretion of the intestinal glands. There could not have been any important diminution in the secretion of bile, although the removal of the secretion was hindered for a time by wasting chronic catarrh of the ductus choledochus. The authors attribute the colic to the observed induration of the abdominal sympathetic ganglia, and also to the proliferation in the intestinal sub-mucous layer, which part is very rich in ganglionic and nervous elements.

Art. 14.—*On the Treatment of the Febrile State.*

By William Aitken, M.D., Professor of Pathology in the Army Medical School.

(*The Science and Practice of Medicine*, sixth edition, 2 vols., 8vo., pp. 944 and 1290. London, 1872.)

We quote in full Dr. Aitken's chapter on the general principles which dictate the treatment of the febrile state :—

"To avert the tendency to death in the febrile state it is necessary to observe how fevers naturally terminate favourably. Four modes are enumerated by Dr. Parkes, namely :—

"1. *By crisis*, in which the temperature falls suddenly in a few hours, and usually with some abundant excretory discharge, in which, possibly, much of the water which has been retained in the system is poured out.

"2. *By lysis*, in which the fall of temperature is gradual from day to day, till the normal standard is attained. The decline may thus occupy many days, the thermometer being known to take seven days in falling from 102° to 98° Fahr.

"3. *By a combination of these two modes*, namely, by a sudden fall of temperature to a certain point, and then a gradual decrease to the normal heat.

"4. *By a somewhat irregular alternation of febrile and non-febrile periods, as shown by the temperature and the issue.*

"When *fever* terminates by any of these modes, convalescence commences, normal nutrition is renewed, and the body begins to gain in weight. The blood is poor in albumen and in red particles; and there is now a danger that the rapidity of metamorphosis of tissue will exceed the healthy standard, as shown by the great tendency to lose heat, which convalescents from fever have. The temperature may fall, and the excretions may diminish below their healthy amount. Great care, constant attendance and watchfulness are required when the patient begins to convalesce, if the fever has been long and severe; and the treatment of the febrile state itself may be thus generally stated as consisting in a combination of measures,—(1.) To reduce excessive heat; (2.) To insure sufficient but not excessive excretion and elimination of the excretions; (3.) To act restoratively on the exhausted and semi-paralysed nerves; (4.) To neutralize any specific poison which may have set up the fever, and so to improve the state of the blood; (5.) To relieve distressing symptoms; and lastly, To obviate and counteract local complications (Parkes, Murchison.)

"(1.) *To reduce excessive heat.*—To accomplish this, the first indication, Dr. Robert Jackson, 'the patriarch of Military Medicine,' and after him Dr. Currie, of Liverpool, in 1797, practised to an extreme degree the application of cold water—a therapeutic agency which is now again challenging attention, so that Medicine, like History, constantly repeats itself. Jürgensen, Liebermeister, Hagenbach, and Küchenmeister, are the most recent advocates and exponents of the application of cold water in the treatment of fevers. In health such an application

tends to increase the metamorphosis of tissue, as shown by Lehmann and Sanderson; and therefore its use in the febrile state requires the greatest care and caution. It is interesting to notice that Küchenmeister confirms the accuracy of Currie's own observations. To be of use, it must be employed very early in the fever, before the third or fourth day. As soon as the temperature rises above 102·5° Fahr., or higher (104° Fahr.), the treatment by cold bath is to be commenced, and continued as long as the temperature remains so high. The effect and object of the bath is to lower the temperature—a lowering which does not reach its minimum immediately after the use of the bath. Hence the great caution required in its use. The diminution of bodily heat appears to be largely due to the excitement of skin transpiration—a condition brought about when the bath has a favourable influence. If the skin be moist and perspiring, the use of a cold water bath is not required.

"Among the many different ways of applying cold water in fevers, Küchenmeister gives the preference to Currie's *cold affusion*—the patient merely sitting in an empty tub, and having from four to six buckets of cold water (40° to 50° Fahr.) poured over him, from a height of about two feet. This form of administration is especially useful where cerebral symptoms are severe, with depression of the motor energy of the brain and cord, threatening paralysis of the heart, or severe degrees of bronchial complication with passive collection of large quantities of thick secretion in the tubes. In the unconsciousness of 'sun-stroke' it is thus useful. If the sitz or shallow bath be used, the patient must have his whole chest, front and back, well rubbed with towels till the skin becomes red, as he sits in the tub. It has been so used with benefit at an early period of *enteric fever* and *scarlet fever* (*The Practitioner*, July, 1869, p. 45). The frequent and careful use of a thermometer for determining the temperature of the patient's body is required as affording the only correct measure of the severity of the fever. It is as necessary to the physician as the compass is to the mariner at sea.

"Sometimes the patient may be laid bodily in a bath of a temperature of about 95° Fahr., which is gradually cooled down to 86° Fahr. or 77° Fahr.: as patients get stronger the bath is used colder and colder—77° or 68° Fahr. After the immersion, lasting from three to fifteen minutes or even an hour, and regulated by effects as indicated by the thermometer, the patient is dried at once and put to bed and covered as usual; and if the feet are cold, warm bottles, or a hot brick enveloped in flannel, may be applied. This method, now being carried out in some parts of Germany, does not recommend itself at first sight, but it may have advantages which we in this country have not yet learned to appreciate. The proper time for the use of the remedy must not be later than the first few days of the fever, and in scarlet fever when the skin is hot and the rash bright and red. The patient being stripped should have four or five gallons of very cold water poured over him (affusion); and when the heat of the surface returns, the application may be repeated and renewed again and again. Its good effect is to lower the temperature, to lessen the frequency of the pulse and the respiration, to render the tongue moist and soft, to diminish or remove stupor, to procure sleep, and sometimes it may bring about a perspiration which brings

relief. But, if there be much nervous irritability, and especially in delicate females, the *shallow bath*, as less exciting than the *cold affusion*, is to be preferred. The patient then sits or is supported in an open bath, about six feet long, in a depth of water from six to twelve inches, having a temperature of from 60° to 80° Fahr. The extremities and trunk must be well rubbed by the assistant, while water of the same temperature as the bath is gently poured over the head. The patient may remain in this shallow bath from five to forty minutes, till the temperature of the body is reduced. In cases of delirium, with a high bodily temperature (104° Fahr.) and prolonged sleeplessness, while the patient is held in a *warm bath* (92° to 98° Fahr.), ten, twenty, thirty, or more bucketfuls of cold water (40° to 60° Fahr.) are to be poured slowly over the head, hot water being constantly added to the immersion bath, so as to maintain its temperature at 92° to 68° Fahr. A refreshing sleep is sometimes the result.

"By using the *douche*, the cold water is made to impinge on some part of the body (head and shoulders, or individual joints, or any part in succession for instance), with considerable force, and the nervous impression produced is correspondingly great—too great and uncontrollable to admit of its frequent employment in this way. Where *delirium* is furious it may sometimes be so quieted, and its good effects become visible if the pulse and breathing improve, or even continue as they were before commencing the *douche*. One good method of applying it is to place the patient in a warm bath, and then apply the cold *douche* to the head as described (Ringer).

"Great relief may also be obtained from the severe headache which is met with in acute specific fevers, if the water be employed as recommended by Prof. J. Hughes Bennett:—'A wash-hand basin should be placed under the ear, and the head allowed to fall over the vessel, by bending the neck over the edge. Then, from a ewer, a stream of cold water should be poured gently over the forehead, and so directed that it may be collected in the basin. It should be continued as long as agreeable, and be repeated frequently. The hair, if long, should be allowed to fall into the cold water, and to draw up the water by capillary attraction.'

"Sucking of ice, also, is most grateful to fever patients; it allays thirst. Cold sponging, or by tepid water, of the body is also resorted to with great relief in fevers. Sponging with very hot water is similarly useful. It will sometimes bring about relief by perspiration; while at the same time it soothes the restlessness and favours sleep (Ringer).

"Blood-letting or hæmorrhage also tends to reduce temperature; but blood-letting can never be tolerated in specific fevers, such as *typhus*, *typhoid*, *scarlatina*, and the like.

"*Infusion of digitalis* has been found by Wunderlich to have a wonderful influence in reducing and moderating the temperature in many febrile states, such as enteric fever. Its most obvious action in small doses is to depress the force of the heart. The dose should therefore be cautiously regulated; it must not be repeated too soon, nor be increased, if it should not operate at once.

"*Alcohol* is another agent, shown by the experiment of Professors C.

Binz, Parkes, and Assistant-Surgeon the late Count Wolowitz, capable of reducing temperature, but only in a very unimportant degree, so that its power as an antiphlogistic is very slight, and such enormous doses must be taken, that harm can only come by any attempt at reduction of temperature from the use of alcohol. Dr. Ringer has made many observations on this point, and is convinced that little can be hoped for from alcohol as a means of diminishing the preternatural heat of fever patients. This much seems certain, however, that its anti-febrile influence is best expressed in the removal of conditions which induce paralysis of the brain and heart, and when the temperature of the body is high, as indicated by the thermometer; in this respect it approaches quinine in its action, but at the same time possesses in addition its well-known stimulating action on the central nervous system and upon the heart. Depression is generally associated with a high temperature *of the blood*, and passes off when it falls. But, in giving alcohol, it must be remembered that two circumstances may contra-indicate its use, namely,—(1). *Its effect on the pulse.* (2). *Its influence on the tone and diameter of the vessels.*

"It increases the heart's beats as well as the strength of the contractions of the heart. If such effects are to be feared, of course alcohol is not proper to be employed, either in fevers or inflammation. Certain precautions must therefore be observed in the administration of alcohol, and its effects on the different functions carefully watched, to learn whether we obtain from the employment of alcohol good or harm: and although the pulse and heart afford the greatest and most reliable information on this point, yet the influence of the alcohol on the other organs must not be overlooked, as it may happen that while one system is benefited, others are injured, and with some good, the alcohol on the whole may do much harm (Ringer).

"The following rules regarding the use of alcoholic stimulants in fever were laid down by Dr. Armstrong, and they have been endorsed by many experienced physicians.

"During the administration of alcohol:—

"1. If the tongue becomes more dry and baked, alcoholic stimulants generally do harm. If it becomes moist, they do good.

"2. If the pulse becomes quicker, they do harm. If it becomes slower they do good.

"3. If the skin becomes hot and parched, they do harm. If it becomes more comfortably moist, they do good.

"4. If the breathing becomes more hurried, they do harm. If it becomes more and more tranquil, they do good.

"'In judging also of the influence of the alcohol on the pulse,' says Professor Ringer, 'its compressibility is of more importance than its volume. Under the action of alcohol, a soft and yielding pulse of large volume often becomes much less compressible and smaller, changes which show an increase in the tonicity of the arteries and in the strength of the heart.' . . . . Other circumstances also afford information as to the employment of alcohol, namely,—'At the two extremes of age, the powers of the body are easily depressed, and hence, with such persons, stimulants are early called for, and must be freely used. In such, and especially the aged, it is of the greatest importance to anticipate pros-

tration by the early employment of alcohol, as when once this occurs, the greatest difficulty is experienced in restoring the patient to his former state. Young children, when weak, take stimulants even in large quantities with benefit. And with the stimulant some easily digested food should always be given.

"*Sulphurous acid* has also been proposed as an agent for the reduction of temperature by Dr. R. Bird, in *Indian Medical Gazette* for February, 1869. In drachm doses every two, three, or four hours, according to intensity of febrile heat, a fall of temperature has followed its administration, continued over twenty-four hours. In remittent fever he considers it especially beneficial, and in 'internal fever'—a native name.

"(2.) *To ensure sufficient but not excessive exertion, and to promote elimination in fever*, is much more difficult than to reduce temperature; which, for obvious reasons, it is not always judicious to attempt either by *cold water, blood-letting, digitalis, or alcohol.*

"The system ought to be supplied with an abundance of alkaline salts, if the urinary excretions are not eliminated.

"*Chloride of sodium, the alkaline salts of soda, and of potash* tend to aid the formation of urea and its elimination. Purgatives generally, and especially *salines—i.e.*, salts of the alkaline and earthy metals—tend to insure a proper excretion, probably by removing from the blood some of the abnormal products formed in fever, and great relief may follow their intelligent use. When urea is retained, they promote its elimination, because it is known that urea sometimes passes off by the mucous membrane of the intestines.

"Dr. Armstrong strongly recommended purgatives to be freely administered to fever patients during the first few days of their illness, and before exhaustion had set in, so as to produce several evacuations in the day. By free purgation in scarlet fever the severe sore throat and swelling of the glands can be prevented, as well as many other of the disagreeable *sequelæ* of this disease, such as discharge from the nose and ears. I have found the following formula of great benefit as a purgative for this purpose:—

"℞. Magnesiæ sulphatis, ʒvi.; solve in aquæ ʒvii.; adde pulv. guaiaci, ʒiss.; pulv. gum. tragacanth. co. gr. xi. *Misce bene.* One sixth part of this mixture given every four hours till the bowels are freely moved, gives great relief to the congested throat and swollen glands.

"But in some fevers, as in *typhus*, purgatives must be very cautiously and sparingly given, and always in mild doses. So also elimination by the skin, to the extent of *diaphoresis*, is to be dreaded in typhus fever (see 'Treatment of Typhus Fever').

"(3.) *Restorative agents.*—The most important indication, however, in the management of the febrile state is to find some substance which, being 'restorative' in its action (Headland), will so act upon the blood and on the nervous system at the same time, as to restore the exhausted energies of the nervous centres.

"*Food, mild stimulants*, and *quinine* are all more or less employed; and *quinine* especially may be employed with benefit. *Infusion of coffee* as a medicine has been given by Dr. Parkes with the beneficial effect of relieving headache. Bocker and Lehmann have shown that the use of

coffee, in health, delays the metamorphosis of tissue, and excites the nervous system. As a nerve-restorative, *phosphorus* merits some notice. And first, as *iron* is given where the blood requires nourishment and restoration, so *phosphorus* seems to nourish and restore the nervous system, especially in cases of fever, where much *phosphoric* acid has been passing by the urine. The forms in which it is given are (1.) in pill, $\frac{1}{40}$th or $\frac{1}{70}$th of a grain of finely divided *phosphorus*, melted with fat, and the pill covered with an impermeable coating; (2.) in the form of *hypophosphites of potash*, *soda*, or *lime*, given in *camphor water*, to the extent of five grains of the salt, three or four times a day. The *potash salts* seem to have a resolvent and liquefacient action so strongly marked, that great mischief may result from its incautious administration to persons affected with tubercular deposit in the lung. For the same reason it is of great value in *chronic bronchitis*, with thick fetid expectoration and congestion of lungs (Dr. Thorowgood, in *Practitioner*, July, 1869, pp. 14-20). *Camphor* has been also found of use in the *adynamic* type of fevers. It acts beneficially in strengthening the pulse and reducing its frequency. At the same time it moistens the skin and subdues delirium, especially the low muttering form. *Twenty grains* or more every two or three hours are required for this result, and its effects must be watched (Graves). *Counter-irritation by blisters* has been largely employed by Graves, and other physicians, as mere stimulants in fever, under the following conditions, described by Dr. Ringer as follows—'With acute diseases, such as the idiopathic fevers and inflammations, it not unfrequently happens that persons already weak and much prostrated have their dangers greatly aggravated by the following mental state—they become apathetic and unobservant, which condition increases till it even reaches partial insensibility or coma, and they can only with difficulty be roused, and then wear a stunned, stupid and vacant look, and understand very imperfectly what is said to them. The body generally sympathizes with this depressed condition of the mind, and its functions are more and more languidly performed, till those necessary to life altogether cease. It is a condition which may not inaptly be compared to one produced by poisoning with opium, where there is partial coma, which produces a lethargy in the functions of the body, whose activity grows less as the coma continues and deepens. But there is no true and refreshing sleep, while it is a condition in which sleep is most urgently needed. With patients in such a precarious state, it is of all things necessary to rouse them from their state of lethargy, and with the restoration of consciousness and activity of mind, there occurs renewed vigour in the functions of the body, and the patient is removed from a state of imminent danger to one of comparative safety. To accomplish this, blisters of large size, in quick succession, and for a short time, should be applied to different parts of the body, for instance, to the chest, to the abdomen, and to the thighs and calves. I have seen very satisfactory results follow their application to the nape of the neck under such circumstances.' Dr. Ringer considers that more good is obtained by an opiate and plenty of stimulants, carefully given to produce sleep, out of which the patient wakes strengthened and much improved. No fixed rule can be laid down; each case must stand on its merits.

"The treatment of any special febrile state depends on the disease of which it forms a part, and by which it is more or less modified—forming a special topic for consideration in the part which treats of special diseases. But it is above all necessary to guard against the habit of trying always to be doing *something*. As a routine system, nothing can be laid down as a rule, either in the direction of depletion, or of evacuants, or of stimulation or restoration. The febrile state is in many diseases part of the essence of the morbid condition, which cannot be cut short nor materially subdued by remedies. There is no specific remedy for the cure of any fever; and in the present state of our knowledge regarding specific febrile diseases, there can be no specific remedy for their cure.

"Every disease where fever is present, and every case of specific febrile disease must be studied so that its management or treatment may be regulated on the merits of the individual case; and must be regulated by the state of each particular function as determined by clinical investigation daily.

"No remedial agent here mentioned can 'cut short' a specific fever. Judiciously employed, they may render them less dangerous, and may in some cases save life."

Art. 15.—*On Typhoid Fever.*

By Sir William Gull, Bart., M.D., F.R.S.

(*The Lancet,* June 29.)

The announcement that Sir William Gull would deliver a lecture at Guy's Hospital on Typhoid Fever naturally brought together a large audience on Thursday, June 20th, composed chiefly of present and past students of that school. The following is a full abstract of the discourse.

Sir William began with the remark that it is about two hundred and fifty years since one of the kings of England died of ague; but now the improved condition of agriculture and drainage in this country is such that ague has become rare, and certainly very few die of it. He then expressed his belief that two hundred and fifty years hence few will die of typhoid fever, inasmuch as this disease is as preventable as ague. Typhoid fever is, *par excellence*, to be ranked amongst "diseases," because it is caused by a virus—a virus of nature—which may get into the healthy body, and increase in it, and destroy it. It is an accidental condition, and not one of the ordinary processes of nature. Therefore we ought to rise up in arms against it, as we Englishmen would rise up in arms against any enemy that should attack us or threaten us.

Sir William said that he was not going to give a lecture on typhoid fever, as such a thing would be impossible in the time allotted; but he appealed to those present, as Guy's students, to sympathise with him as a Guy's man, in late conditions which have given rise to the increased attention to the subject of typhoid fever. Many diseases that were formerly very fatal are recoiling before the advances of civilization—to wit, the plague, ague, and even cholera. Typhoid fever is stated to kill 17,000 a year in England; how great, then, must be the number

attacked! It stood among the preventable diseases, and it was important, therefore, to know how it originates. There is no scientific theory, but there is a good working theory on the point. The origination of the disease is, somehow or another, connected with drainage. It has, therefore, been called the filth fever; hence to get rid of the filth is to get rid of the fever. It seems as if this really is so, for Millbank Prison was infested with typhoid and dysentery, but now the water-supply has been changed, and the drainage attended to, these diseases have almost entirely disappeared. No one can approach a case of typhoid fever without paying some attention to hygiene. It is no use tinkering with the disease if one does not try to prevent it, and it no doubt may be prevented. The theory is that it is connected with germs which get into the blood; we know nothing about these germs—the air is full of them. There is an idea that they are imbibed by drinking water, and that they increase and multiply within the body. Although this has not been demonstrated, yet it is a good working theory.

The first thing then to be done is to find out what will prevent the disease. Some may say, "Tell us what will cure it;" but this is not of such importance as the prevention. Sir William next said that he liked the name *typhoid* because the disease resembled *typhus*, and yet it was not typhus. It is an error to suppose that there are symptoms of typhoid fever essentially, for the poison may get into the body, and destroy life, without setting up any symptoms of typhoid fever proper. Some years ago a case was taken into Guy's Hospital, the patient having become suddenly ill; and shortly after admission he died, but the cause of death was not suspected till a post-mortem examination revealed perforated typhoid ulcers of the intestines. This patient had gone about his work regularly up to the day of his death. The next subject is the diagnosis of this disease. This is sometimes at first uncertain; patients rarely come till they have been ailing some time. The furred tongue, headache, malaise, &c., belong to other diseases besides typhoid fever, therefore the term typhoid is a good one, because the symptoms somewhat resemble those of typhus. Many other names have been given to this disease, but the one most generally adopted is typhoid fever. It has been called pythogenic fever, from its supposed origin from filth; but it is not advisable to accept this name, as at some future time it might be necessary to change again.

The history of an attack of typhoid fever is somewhat obscure. The poison lurks in the body some time before the real onset of fever; it may be as long as five or six weeks. The disease then begins insidiously and irregularly; the prodromata are uncertain. Where does this poison work? Is it in the intestinal tissue, or in the mucous membranes, or in the absorbent system? We do not know; we say that it is in the blood. Where are these lurking beginnings? These are probably in the intestinal system, for we find digestive disorders and disturbance of the bowels in the first instance. It is, however, very difficult to say when the disease begins; but if the ordinary course of health be represented by a straight line, we shall find at the commencement of the disease an abrupt deviation from this straight line, which deviation goes on increasing till the fourth to the sixth day; consequently, we find that on the fourth day the patient is ill, and on the fifth or sixth day

very ill and obliged to keep his bed. It is about this time that we first see these patients as a rule, and how are we to tell that they have got fever? Well, by the little instrument called the thermometer. Now, if on even the first day the temperature be normal in the afternoon, there is no fever. In typhoid the temperature increases 1·5° to 2·0°, or even 2·5° F. in the first twenty-four hours. If a person who has been exposed to typhoid fever have a headache, and his temperature be 101·5° on the first day, it may be typhoid; but if, as is sometimes the case in persons who have been nursing, the temperature be below normal, or even if it be normal, you may be certain that there is not fever present. On the other hand, if on the first day the temperature be 105° you may be certain that the disease is not typhoid. We see, therefore, that whether the temperature be too low or too high the thermometer will greatly assist us in making a diagnosis. The temperature goes on rising about 1·5° per diem till about the fifth or sixth day, when it reaches its maximum of about 103·5° or 104·0°, or even more. This is not absolutely true, because some persons may go through typhoid fever and know nothing at all about it. In this disease, therefore, we see that there is first a long and uncertain prodromal stage, and then the onset of fever, which is insidious. Although the degree of temperature is reliable in determining the presence or absence of fever, the same cannot be said of the condition of the pulse, for, in nervous patients, the rapidity of the pulse may be greatly increased, and yet no fever be present. It therefore becomes an important thing to use the thermometer in practice; it will save many errors if used at the proper hour of the day—that is, in the afternoon.

To return to the course of typhoid fever, we find (still adhering to the chart) that on the twenty-first day the curved line suddenly runs into the straight line of ordinary health, and the fever is completed. In some cases, however, this does not take place till the twenty-eighth day. During this course we cannot give an answer to the queries of the patient's friends, "Is he better?" We must refer them to the chart, and tell them what is the course through which the disease must go. "We shall find no word 'better' written anywhere on the curve." Without this is borne in mind much annoyance may be given to the friends, for in the morning the patient may be cooler and appear better, but in the evening he is hotter and appears worse, and if the medical man were to alter his opinion according to the degree of temperature, the friends might say that the attendant knew nothing whatever about the disease. It is necessary to wait the natural term of the disease before we can say whether the patient is better; moreover we must bear in mind that two charts of the course of the disease may be drawn out, in which the disease is represented as lasting twenty-one days, and the other in which it lasts twenty-eight days. But it is not always easy to say which is the twenty-first or twenty-eighth day, as it is so difficult often to fix the date at which the disease began; but by carefully recording the temperature we may tell the time to a couple of days. On the other hand, it is not always that we can say positively the patient is better on these days, for the disease may, as it were, begin again, and exactly repeat itself, and this repetition may last twenty-eight days more, or it may even triple itself, as Sir William taught many years ago,

when lecturing on this subject to the students at Guy's Hospital. This triple attack may last as long as the previous ones. These repetitions have been found on post-mortem examination to correspond with fresh outbreaks of the intestinal affection; for in these cases, should death occur, some of the ulcers will be found almost healed, while others are just beginning to be affected. It is always necessary, therefore, to give a prognosis which shall allow of the possibility of these secondary attacks. But these repeated attacks do not necessarily last as long as the previous ones; they may be much shorter, lasting only one, two, or three weeks. So that typhoid fever may have a simple course of twenty-one days, or a prolonged course of twenty-eight days, or a double or triple course, the duration of which equals that of the previous attack; or lastly, a complete course—one or two attacks of ordinary duration, with another of shorter duration.

Now, in whatever manner the poison of typhoid is introduced into the system there is a concentration in the ileum. The presence or absence of diarrhœa depends on the implication or not of the large intestine. Although the ileum is the focus of the operation of the poison, yet it does not end here, for it is reflected to every organ of the body. The incidence of the poison is on the ileum, but the reflection is over the whole body. The body reacts to these conditions, and the fever is a reaction to the local condition of the bowels; but this does not imply that typhoid fever is a local affection of the bowels, as was formerly taught. This poison reacts in other ways, as by setting up ulceration in various parts of the body. He was once called to the case of a young girl who was sickening of an illness. She had a discharge from the vagina, which led the medical attendant to doubt the girl's chastity; but he (Sir William) said that it was typhoid, and that the discharge was due to ulceration of the vagina. Another case, in Guy's Hospital, was treated as a gonorrhœa; but in reality the patient had ulceration of the prepuce from typhoid fever. In a third case, the patient had perforating ulceration of the larynx, and he suddenly became emphysematous over the body, which "floored" him (Sir William); but this case was shown after death to be one of ulceration of the larynx occurring in the course of typhoid fever. This disease, then, is not a local one, although the focus of the action is in the ileum. But to return to the chart. About the ninth day of the disease mischief begins to show itself in the intestines, and at this time the deposit may open up a large blood-vessel, and thus give rise to severe hæmorrhage, or, if it go still deeper, perforation of the bowel may take place; or the bronchial membranes may become affected, or the bronchial glands enlarged, which may give rise by reflex action to spasm of the larynx. Every organ in the body is affected if the disease be severe. Every part of the body may be affected through the nervous system. There is a tendency to reaction. There may be pleurisy; or the enlarged mesenteric glands may soften and suppurate, which may be followed by purulent infection; or the kidneys may become diseased. In fact any organ may become affected through the action of the nervous, venous, or other systems.

Now as to the treatment. This disease cannot be cut short, even in its early stage. Some have thought that it could be done by emetics, but

few think so now. Others have thought that a purge of calomel and colocynth would cut short the attack, but this has been almost entirely given up. Others say that large doses of quinine will shorten the attack, or at least prevent serious complications; but Sir William related a case to which he was called, where large doses of quinine had been given, but the man was almost dead from hæmorrhage, so that, in this case, the disease was neither cut short nor complications prevented. At the present time it must be granted that when once the patient has begun to go down the curve we must not dose him with medicines—we must not give him physic. The best thing is to place him in bed in a horizontal position and reserve his nervous power, remembering that he must, if he live, go through the whole course of the disease. He has to go through the reactions of his nervous, absorbent, and nutritive systems—he has, in fact, to go through "a great physiological storm." Let the patient alone, then, in this stage; "an early rest will save his power." But how is he to be treated through the remainder of the course? Is there anything to make the course less severe? Probably not. Quinine has been tried for this also, but has failed here as signally as when given to cut short the disease. It must be said that all the treatment consists of simple measures and simple diet. Medicines are only required for special conditions: for instance, if diarrhœa occur, some will give what is called "chalk mixture;" but we must remember that this has to go through about twenty-five feet of intestine. The best thing is to fill the rectum with five or six ounces of starch; it is not even necessary to put any opium with the starch. The diarrhœa only takes place when the rectum, sigmoid flexure, or descending colon is affected or irritated by acrid matters; hence if you fill these the contact of noxious matters is prevented and the diarrhœa checked. Time would not allow of more being said on this. (Here Sir William said he was not lecturing on typhoid fever but only giving a few thoughts). If hæmorrhage occur, many would give gallic acid, or tannic acid, or lead, or some powerful astringent. But do not so; "don't begin with all your great guns at once." It is best to trust to the hæmorrhage to cure itself, which it will do, and keep the patient at rest in the horizontal posture, giving a little opium (half a grain) by rectum or mouth if necessary to quiet the intestines. Ice may also be applied to the abdomen. This is sound advice, although it may appear terrible. The objection to giving lead or gallic acid or other powerful astringents is that they are apt to make the patient sick, and in that manner perhaps to make the hæmorrhage worse. Often delirium comes on in the course of the disease. The patient may get out of bed, or even commit suicide by jumping out of the window. What is to be done for the delirium? In the first place, never leave the patient alone day or night after he has begun to descend the curve, for delirium may come on at any time; therefore, he must be constantly watched. In the treatment of this complication remember that it is due to brain-irritation, and not to inflammation, as some have imagined. There is one great remedy for this, and it is alcohol; alcohol is the remedy for nervous irritation in typhoid fever, and, in fact, in any fever. How it acts is not certainly known, but it may be laid down that it is an important point in the treatment of all fevers. It allays nervous irritation and soothes the nervous system.

Whenever, therefore, there is delirium or reflex irritation, give alcohol, in some form or another, as brandy or wine; but when the result has been obtained, stop it; only give it when it is necessary. In fevers the use of stimulants is for the delirium, and it in no way alters the local processes, but only the reflex condition. All cases do not require alcohol, and some only require it occasionally and for a short time. Delirium even in the early stages may be checked by brandy, and never again come on during the whole course of the disease.

There is another point. Often the patient cannot or ought not to be moved out of bed. How is he to pass his stools? There is a danger of bedsores if care be not exercised to prevent them; but no man who has a due care ought, under ordinary circumstances, to have a patient suffering from bedsore; sometimes, however, the circumstances are such that these sores cannot be prevented. The bed-pan may become the source of a bedsore which may carry off the patient. Avoid, therefore, every possible cause of irritation or abrasion of the skin. This is a point which is worthy of the consideration of every clinical physician. Again, it may be necessary to pass a catheter to draw off the patient's urine. Now this may be done in such a manner as to injure the urethra, which may be in a very tender state, and cause ulceration and severe symptoms, and even death. Use, then, a soft catheter, with all possible care and delicacy. In summing up he observed that the recovery from typhoid is dependent on attention to the smallest matters.

The time will come when this disease will become rare, or even die out.

We must save the patient's strength from the beginning, and not trust to medicines to cure the disease. The materia medica of fever is lessening every year.

Sir William would prefer to carry any one through typhoid fever by wines and soups and fresh air, rather than by the use of drugs.

Art. 16.—*On the Period of Incubation of Typhus Relapsing Fever and Enteric Fever.*

By Charles Murchison, M.D., LL.D., F.R.S.

(*St. Thomas's Hospital Reports*, vol. ii., 1871.)

From the facts contained in this paper the following conclusions may be drawn:—

Typhus Fever.—1. The period of incubation of typhus varies in duration in different cases. 2. In a large proportion of cases it is about twelve days. 3. In exceptional cases it is longer than twelve days, but it rarely, if ever, exceeds three weeks. 4. In many cases (one third or more) it is less than twelve days, and occasionally there is scarcely any latent period, the symptoms commencing almost at the instant of exposure to the poison.

Relapsing Fever.—1. The period of incubation of relapsing fever is not a fixed period, and is even more variable than that of typhus. 2. It

is, on the whole, shorter than that of typhus. 3. Occasionally, as in typhus, there is scarcely any latent period at all, the symptoms commencing almost immediately after the first exposure to the poison.

Enteric Fever.—1. The period of incubation of enteric fever is most commonly about two weeks. 2. Instances of a longer duration appear to be more common than in typhus or relapsing fever. 3. The period of incubation is often less than two weeks, and, as in typhus and relapsing fever, it may not exceed one or two days.

Art. 17.—*On the Convalescence of Typhoid Fever.**

By M. Cornil.

(*Gazette Hebdomadaire*, No. 20, 1872.)

The question of relapses of typhoid fever and the possibility of the development of pulmonary tubercles during convalescence are two points which the author has sought to elucidate by means of the following case: A female patient after a severe attack of typhoid fever slowly passed into the stage of convalescence. For some days there was sub-delirium, especially at night. At the end of a short time a febrile relapse occurred, which was accompanied by all the symptoms of typhoid fever. At the fifteenth day of this relapse the severe symptoms were relieved, but the patient was still afflicted with sub-delirium, deafness, and diarrhœa. On the twentieth day there was marked amelioration, but the diarrhœa still continued. After a few days vomiting occurred, and then cough with muco-purulent expectoration. The patient daily became weaker in consequence of uncontrollable diarrhœa and vomiting, and she finally succumbed.

At the autopsy traces of typhoid fever were observed. Peyer's patches were of a slate colour and in process of cicatrization; there was fatty degeneration of the liver, kidneys, and heart, and miliary tubercles were present in both lungs. At the same time one could make out the characteristic lesions of generalized enteritis.

An elaborate microscopical examination made by M Cornil revealed the following: 1. On the normal intestines villosities, the vessels of which were filled with blood. 2. Over Peyer's patches a total absence of the superficial coat of the intestines; villosities, tubular glands, and closed follicles were all absent. There existed only an embryonic tissue composed of very numerous small spherical elements, separated by delicate fibrillæ; a certain number of these elements, especially about the vessels, were infiltrated with black pigment. At no part could any agglomeration be found of those elements in the form of nodules, nor was there any granulo-fatty degeneration to be found which could be attributed to tuberculosis.

M. Cornil, in comparing the symptoms observed in this case with the anatomical lesions, thinks that the slate-coloured cicatrices found in the

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* Communicated to the Société Médicale des Hôpitaux, Paris.

intestine were caused by the first attack of typhoid fever and not by the relapse, and that at the time of this relapse no fresh ulceration occurred in Peyer's patches, the mucous coverings and the glands of which had already been destroyed during the first attack. The diarrhœa and vomiting which took place after the relapse were the result of inflammation of the large intestines, and of the propagation of this inflammation to the whole of the gastro-intestinal tube; the symptoms of the tuberculous pulmonary affection were not produced until at nearly the end.

The morbid phenomena then succeeded each other in the following order: 1. A severe attack of typhoid fever. 2. A relapse of the fever with *typhoid symptoms*, caused by intense ilco-colic catarrh. 3. A discrete tubercular eruption. The author then asks whether relapses of typhoid fever are characterized anatomically by a tumefaction of Peyer's glands analogous to that of initial typhoid fever, or only by ordinary entero-colitis.

It is scarcely necessary to state that the author thinks there is no antagonism between typhoid fever and phthisis.

The well-marked fatty degeneration of the liver, heart, and kidneys was not quite comparable to that which results from phosphorus poisoning, but that it was not accompanied by albuminuria is an extremely remarkable fact, to which M. Cornil intends to turn his attention.

Art. 18.—*On the Extinction of Typhoid Fever in the Millbank Prison by the Disuse of Thames Water.*

By Surgeon-Major A. C. C. De Renzy, Sanitary Commissioner, Punjab.

(*The Lancet*, June 15.)

The sanitary history of Millbank appears to Mr. De Renzy to warrant the following conclusions:—

1. That the extinction of typhoid fever and other diseases of the same class, is quite within the range of practicability.

2. That the extinction of one class of zymotic diseases is not necessarily followed by zymotic diseases of a different class. For example: it is supposed that the increased prevalence of scarlatina and measles of late years is due to the partial displacement of small-pox by vaccination. The case of Millbank shows that it is practicable to protect a community against every kind of zymotic disease. Ignorance of sanitary science is the great obstacle to the extension of this protection to the free population.

3. That since some of the ablest physicians in London failed for many years to detect the true cause of the unhealthiness of Millbank Prison, and assigned causes for it which later experience has found to be unconnected with it, the probability is that a similar error is frequently made elsewhere, and that the prevalence of some zymotic diseases is ascribed to locality, malaria, heat, cold, variations of temperature, moral depression, and other intangible influences which would be entirely removed by the general disuse of impure water.

4. That as it required long years of observation to establish the noxious influence of Thames water in Millbank, even when well filtered, under conditions very favourable for detection, we should be cautious in accepting the opinion, based on the results of chemical analysis, that the use of that water by the population of London is free from danger.

5. That the vital statistics of prisons, carefully kept and tabulated, would be of the greatest value as data for the investigation of the causes of disease. Those now published by the Directors of Convict Prisons are excellent. The sanitary information given in the reports of the Inspectors of Prisons is of the most meagre description and of no practical use.

Art. 19.—*On the Etiology of Exanthematic Typhus.**

By M. Chauffard.

(*Gazette Hebdomadaire*, No. 42, 1872.)

According to all modern classical works, exanthematic typhus is produced spontaneously, and for the development of this pest it is sufficient that large collections of men, such as constitute armies in the field or fill besieged cities, fall into a profound degree of misery, of privations, and of physical and moral sufferings. Overcrowding, faulty ventilation in camps and in hospitals, inattention to cleanliness on the part of soldiers, insufficient or defective food, excessive wet or cold, fatigue, watching, nostalgia, low spirits, defeats, the neighbourhood of a field of battle in which corpses lie close under the surface, relaxed discipline and all its bad results, these are the causes which when united are supposed to engender typhus; hence this fever has been called *camp typhus*, *army typhus*, the *typhus of besieged cities*.

Without contesting the action of most of these causes, M. Chauffard holds that one is not obliged to restrict to these common factors the whole etiology of exanthematic typhus.

The accumulation of these etiological conditions was met with in the highest degree in the sieges of Paris and Metz. And yet, notwithstanding unfavourable anticipations which everything seemed to justify, typhus did not appear in either of these two cities, wherein everything seemed prepared for a ready explosion of the evil. M. Chauffard shows, by a table on which may be traced the pathological history of the siege of Paris, that all the maladies of various names and kinds which so cruelly struck both the military and civil population presented an invariable and common modality, that of the adynamic, putrid, ataxic, and typhoid state; he recalls to mind the ravages caused by purulent infection upon those wounded in war and the subjects of capital operations as a certain sign of the diminished vital resistance of the patients. With regard to exanthematic typhus not a single case was observed, either of

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* Communicated to the Académie de Médecine, Paris.

the complete form, of the supposed modified forms, or of that other and reduced form which is called relapsing or abortive typhus.

At Metz, where the situation was more disastrous, and where misery, overcrowding, and want, were greater than at Paris, typhus did not break out. M. Chauffard in this statement relies on the unequivocal testimony of Drs. Grellois, Libermann, Leptat, Cros, and Ehrmann, all of whom give precise and interesting accounts of the medical aspect of the siege of Metz. This absence of typhus from a city which had suffered so much and for so long a time, and in which were condensed all the generally acknowledged causes of this disease, was noted, after the raising of the blockade, by three eminent medical men in the German army, Frerichs, Niemeyer, and Langenbeck.

But the most surprising fact is this, that exanthematic typhus, which spared the besieged city, raged amongst the besiegers and inflicted considerable loss. In the victorious Prussian army, which was well provisioned and occupied large spaces, there were 6595 deaths. So that, contrary to the generally received ideas concerning the etiology of typhus, this disease was absent where everything seemed to favour its development and existed where no one expected to meet with it.

Misery, famine, and overcrowding seem, then, in Dr. Chauffard's eyes to be insufficient to create exanthematic typhus. These causes may engender typhoid fevers and adynamic maladies of various characters; but do not give rise to that specific and regular pyrexia of well-marked type to which alone ought to be given the name of typhus.

One ought, then, to admit that there exist other unrecognised or neglected etiological conditions the influence of which is very great. The essential and chief conditions M. Chauffard considers to be race, soil, and climate. Referring to the progress and development of the two epidemics of typhus which were manifested in France, one during the invasions of 1814 and 1815, the other after the Crimean war in 1855 and 1856, he shows that these epidemics, which were contracted by our armies on a foreign soil, penetrated into France by importation only, and after the return of the troops and the discharge of wounded and diseased soldiers, who brought with them the typhus which they had contracted abroad. Then these epidemics imported into France, and on to a soil which was not their own, soon died out, as if they had failed to meet with such elements of fecundity and renewal as they found elsewhere. "We find, then," says M. Chauffard, "in our race, in our climate, and in our soil, those conditions which hinder the acclimatization of typhus amongst us."

To these views might be opposed the facts of small epidemics of typhus observed in prisons and in galleys, such as that in Niantec, which has been so well described by Dr. Gillet, and the local epidemics which still arise in Algiers. M. Chauffard would reply to these objections, that it is difficult to prove that most of these epidemics do not derive their origin from importation, especially when they appear in galleys and in harbours. And then it is possible that in many cases unusual forms of typhoid fever, infectious jaundice, epidemic cerebro-spinal meningitis, cerebro-spinal typhus, and meningo-typhus may be confounded with true typhus fever.

From all these facts M. Chauffard thinks that he may draw the

conclusion that one ought not to restrict the occasional causes of typhus to the deleterious influences of misery and overcrowding. Race and soil furnish to the etiology of this disease essential and major conditions, and typhus, like cholera, ought to be ranged amongst the epidemic maladies of exotic origin which appear in France only by importation, and which do not become acclimatized when they have been imported.

Art. 20.—*Treatment of Hæmorrhagic Malarial Fever.*

By B. M. Cromwell, M.D.

(*Atlanta Medical and Surgical Journal*, June, 1872.)

Dr. Cromwell says that the general principles of treatment are to avoid all remedies that tend by their action to depress the prostrated vital functions; to restrain vomiting, assuage thirst by the free use of ice; and to guard against chills by the generous use of quinine. In addition to this, the most successfully treated cases which came under his observation were those in which lime-juice and iron were freely used; the lime-juice because its beneficial effects are well known in scurvy, a kindred disease, and iron as furnishing a ready means of converting white into red corpuscles. He has seen mischief follow the use of morphia or the preparations of opium in checking the feeble eliminative process going on at the time. He also remarks, as a peculiarity of the disease, that its ravages have been almost exclusively confined to what is regarded as the healthiest portion of the country—the pine woods.

Art. 21.—*On Acute Purulent Infection.**

By Professor Maurice Perrin.

(*Gazette Médicale de Paris.* No. 44, 1872.)

"1. Contused wounds, particularly when they are complicated with fractures or interstitial effusions of blood, expose the patients to an order of severe bad symptoms, which cannot be attributed to anything else than poisoning from a wound in process of putrid decomposition.

"2. The putrid condition of the wound is indicated by the colour, and especially by the fetid odour of the fluid that it secretes.

"3. The poisoning which thus results, which may be foretold when such a condition of the wound is observed, is manifested by effects which are, on the one hand, the evolution of a gangrenous process which cannot be due to primary vascular lesions, and which commences in deep-rooted progressive œdema and ends speedily in sphacelus with or without apparent production of gas; on the other hand, in general disturbances resembling those created by septic changes of the blood.

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* Communicated to the Académie de Médecine.

"4. This poisoning, by reason of the well-defined nature of its cause, the uniformity of its symptoms, and its complete resemblance to the effects spontaneously developed or created in large animals under the action of putrid products, is best designated, as it seems to me, by the name of acute putrid infection. It is my idea thus to specify a special and accidental form of complications of wounds.

"5. Acute putrid infection cannot be attributed to the violence of the injury; for its production it is sufficient that there be present in the wound solid or fluid organic material destined for putrid decomposition and elimination.

"6. With this motive and taking into consideration the features of resemblance which exist between the facts under discussion and the facts of traumatic emphysema, we think that both may be attributed to the same cause—acute purulent infection.

"7. The treatment ought to be preventive, and should have for its objects the neutralization of the putrescible material, on the one hand, and, on the other, the setting up of as complete a barrier as possible to the penetration of this material by any way into the economy.

"8. Alcohol, sufficiently concentrated when employed in continuous irrigations which are directed in such a manner that all the parts condemned to elimination are bathed and in some way macerated by the liquid, seems to me to be the most appropriate therapeutical agent.

"9. Continuous irrigations ought to be instituted immediately after the reception of the injury, and on all patients suffering from contused wounds.

"10. They ought to be continued without intermission until the termination of the infectious stage of wounds.

"11. Alcohol, by the refrigeration of the tissues which it produces, moderates local reactions, renders wounds insensible, and seems to prevent the development of inflammatory symptoms."

Art. 22.—*On Intermittent Malaise.*

By Henry Adams, M.D., M.R.C.P.

In a pamphlet bearing the above title Dr. Adams describes a train of symptoms for which he proposes the term *Intermittent Malaise*, "a disease akin to ague, yet as distinct from it as typhus is from typhoid." He mentions three varieties—viz., *anæmic*, *bilious*, and *neuralgic*. The first comes on with distressing feelings of lassitude and exhaustion. The patient in a general way speedily breaks out into a cold, clammy sweat, the heart's action is quickened, sometimes amounting to palpitation, the pulse is feeble, and in some cases cannot be counted. This state of depression lasts for a certain time, varying from ten minutes to one and even ten hours. Gradually reaction comes on, and the patient in a short time feels as well as ever until the next day, or perhaps the day after, when at the same hour he undergoes a repetition of the same symptoms.

Bilious intermittent malaise more nearly resembles the disease known as dumb ague, and it is met with, the author tells us, most frequently

in ague districts, although he has treated it in localities where ague is known only by name.

The third type—viz., *neuralgic intermittent malaise*—Dr. Adams states, is doubtless often mistaken for simple neuralgia or tic doloreux; but there is this very marked difference, the pain is periodic, and it is frequently preceded by a sensation of chilliness succeeded by more or less heat, plainly showing its near relationship to ague. After a certain amount of suffering the pain will leave the patient for a time, but only for a time, for on the following day at the same hour, and almost at the same moment, he will again undergo a repetition of his former sufferings, unless the disease is checked by treatment.

Dr. Adams relates a number of cases to illustrate the various symptoms for which he proposes the designation at the head of this article. Quinine, it appears, is the only remedy the author has found he could depend on for the treatment of this complaint.

Art. 23.—*Hectic Fever.*

By Francis D. Condie, M.D., Philadelphia.

(*American Journal of the Medical Sciences.*)

Dr. Condie says that the presence or absence of hectic fever furnishes no certain evidence of the presence or absence of pulmonary disease, and under no circumstances is it of any value in the establishment of a correct diagnosis between the tubercular and what he has denominated the spurious form of pulmonary phthisis, it being as often present in the one as in the other.

Art. 24.—*Recurrent Variola.*

By M. E. Webb, M.D.

(*Boston Medical and Surgical Journal*, June.)

Dr. Webb reports an interesting case of this in a healthy and well nourished child aged seven months, who a month previously had been unsuccessfully vaccinated. The disease was discrete variola, so diagnosed by competent authorities. The child, probably, was infected by the sister, and a fatal case of the disease died some days after. The child perfectly recovered, with several well-marked scars on various parts of the body. Five weeks after the child had a second attack which proved fatal on the eighth day, during the secondary fever.

Dr. Webb was informed by Dr. Green, City Physician, that he had seen during the present year seven cases in which variola had occurred a second time. In these, however, many years (from fifteen to forty) had elapsed between the first and second attacks, while in the case first cited the disease occurred in the short space of five weeks.

Art. 25.—*Treatment of Dropsy.*

By F. T. Roberts, M.D.

(*The Practitioner*, May.)

Dr. Roberts, in a paper on this subject, calls attention to the following measures which may be employed with advantage in different cases, and in many two or more can be combined. 1. The maintenance of *rest* and of an *appropriate position*. 2. The use of baths, both *general* and *local*. 3. The employment of regular and systematic *pressure*. 4. Removal of the fluid by *operation*. One or other of these may be employed with advan age in different cases, and in many two or more can be combined.

1. The object of *rest* and *position* is to place the parts affected in a posture unfavourable to the action of gravity, so that the veins may not be over-distended or the fluid tend to accumulate in dependent parts, and thus, with the aid of rest, to promote the absorption of what has already collected. It is in the case of anasarca of the legs and œdema of the scrotum that attention to this point proves most serviceable.

2. He advocates having recourse to the *regular* employment of some effectual bath if it is desired to excite the excretory functions of the skin sufficiently to produce any marked benefit. If it can be used, a general bath of course acts best, and either the hot-air or vapour bath is to be preferred; it is especially in the general dropsy of Bright's disease that these are valuable. In many cases, however, especially in cardiac affections, the patient cannot bear a repetition of either of these, and under these circumstances I have found marked benefit from the application of local heat and moisture in the following simple manner, by which the parts are kept in a perpetual local bath. Each leg is wrapped up, from the hip down, in a large flannel, wrung as dry as possible after having been dipped in very hot water, and this is enveloped in a piece of mackintosh of sufficient size, which prevents evaporation and cooling; the flannels are changed about every hour, care being taken to avoid chilling the patient, and the legs are well dried before a fresh application is made. I have often been surprised at the very satisfactory results of this plan, both in hospital and private practice, if persevered in for two or three days, and there is no difficulty, as a rule, in following it out.

3. Considerable advantage may be obtained by the employment of steady and continuous pressure, applied by means of bandages or some elastic apparatus, care being taken that it is made properly and uniformly, varying its amount according to the nature of the case. Not only is it useful in itself, but it materially helps another mode of treatment hereafter to be considered.

In local dropsies, the result of venous obstruction, this does more good, he says, than anything else.

4. The early and, if necessary, repeated performance of *paracentesis abdominis* in appropriate cases of ascites is strongly advocated.

Puncturing the legs and scrotum, when considerable œdema exists in

these parts, is also recommended. In cardiac dropsy a few punctures, repeated for some days, may, he says, give material help in removing the fluid altogether, at all events for a time, by relieving the over-distended vessels, and thus enabling them to absorb. Of course permanent benefit is not to be expected in these cases, but it is a great thing to relieve the very unpleasant feelings associated with this form of dropsy. In the case of the legs, it is below the knee that the punctures should be made, as, if they are made above this point, urine may come into contact with them, and lead to erysipelas. It is unnecessary to make large incisions, the punctures produced by ordinary harelip pins answering very well. Several may be made at intervals in dependent parts, also on the dorsum of the foot, if required; and they may be repeated, if necessary, so long as there is no sign of irritation. It is advisable to wrap up the limbs in cotton-wool and flannel, which should be frequently changed. As regards the scrotum, this may be punctured in several points on both sides, and then well fomented. Great care must be taken to keep this part clean. In some cases the operation causes it to become indurated, and this condition resists the further accumulation of fluid.

ART. 26.—*Report of a Case of Acute Rheumatism with Cerebral Symptoms and High Temperature treated unsuccessfully by Cold Affusion.*

By REGINALD SOUTHEY, M.D., F.R.C.P.

(*Medical Times and Gazette*, Oct. 19.)

At a meeting of the Clinical Society of London, October 11th, Dr. Southey related a "Case of Acute Rheumatism with Cerebral Symptoms and High Temperature treated unsuccessfully by Cold Affusion" in a well-built man, aged thirty-five, of highly nervous temperament, in the habit of drinking wine and beer, but not intemperate. This was his first attack of acute rheumatism. The rheumatic articular inflammations were not established until after he had been ailing for fourteen days, with a temperature ranging between 100° and 102·5°. The rheumatic symptoms were well marked. The invasion of several joints with swelling and redness, the tongue, the pulse, and the sweating were highly characteristic. On the eighteenth day of illness pericarditis set in, the joint-inflammation suddenly subsided, and delirium of a peculiar kind, preceded by head-pain and obscurity of vision, presented itself; the temperature now ranged between 104° and 105° in the axilla for ten days, while twelve grains of quinine, from six to ten ounces of brandy per diem, and various opiates, as well as chloral, were administered with little sedative effect. Bronchial symptoms now ensued, with great failure of power, although food and stimulants were freely taken. Delirium, akin to coma vigil, still continuing, and his temperature marking 105°, the patient was immersed in a bath quickly cooled down from 96° to 71°. The effect was immediate dissipation of delirium, with reduction of temperature to 100·5°, followed by short repose; but, the bodily temperature quickly rising again, he was maintained wrapped in

a wet sheet exposed to the air of the room at 65° for an hour. After this his temperature fell and remained between 101° and 102° for two days. Some rest was now obtained, the pulmonary symptoms relieved, and respirations fell from 36 to 28 per minute. Subsequently, the wet sheet was frequently employed, on four occasions as often as three times in the twenty-four hours, with invariable relief of the delirium and subsultus. From the eighteenth day of his illness up to the fortieth quinine was given in doses varying from twelve to twenty-four grains in the twenty-four hours, as well as brandy, from four to ten ounces, without noticeable good or ill effect. On the thirty-third day of his illness his temperature fell spontaneously to 100·5°; he was then quite rational for twelve hours, and there was a slight return of the rheumatic pains in the joints, which lasted, however, only for a few hours. The patient gradually sank with low broncho-pneumonic symptoms on the forty-second day of his illness. The post-mortem examination revealed that swollen condition of the glandular viscera ordinarily discovered after all acute febrile diseases, but no tubercle anywhere in the body, and no apparent mischief in the brain or its membranes. The author of the communication considered the case one of cerebral rheumatism, and thought that the cold water treatment had prolonged life and relieved the delirium.

Art. 27.—*On Asiatic Cholera in Africa.*

By William Smart, M.D., C.B., R.N.

(*The Lancet*, July 27.)

At a meeting of the Epidemiological Society of London, on June 12th, a paper was read by Dr. Smart, C.B., R.N., "On Asiatic Cholera in Africa." Africa, from its geographical features and social conditions, possesses four epidemiological regions: 1. Egypt and Tripoli. 2. The western basin of the Mediterranean so far as Algeria and Morocco form part of it. 3. The West Coast south of the Sahara. 4. The East Coast from Abyssinia to the Portuguese settlements. Egypt, next neighbour to Arabia, has not suffered invariably when Arabia has done so. Its visitations have been of short duration. It has on one occasion only been the source of European infection, in 1865, and, on the other hand, it would appear to have been infected from Europe in 1854. Tripoli, although not always involved in the epidemics of Egypt, as in 1847-48, and '54, has had its visitations concurrently with others of that country. Tunis has generally followed on Algeria after a year's interval. In 1859-60 it escaped when Algeria was infected. Egypt was also then untouched, Arabia being infected. The western basin of the Mediterranean, except in 1865, when it received its infection from Egypt, has participated in the epidemics of Northern Europe imported into its Atlantic States. But in 1853, and again in 1859, its epidemics are said by some to have had regional origin and growth in the Peninsula. Algeria and Morocco have been always indebted to the European shore for the "contagion" of cholera, the former generally to France, except in 1834 and 1859, when it was so to Spain, and the latter to

Spain usually. Morocco was free in 1865, when Spain was severely visited, but this was reversed in 1868, Spain being then free and Morocco diseased, having relighted the epidemic that had been present in Algeria in 1866-67, and in Tunis in the latter year. Both Morocco and Tunis had excluded cholera by quarantine in 1865, but they failed later on their land frontiers. The West Coast of Africa was visited for the first and only time in 1868-69, when the disease appears to have been carried from Fez across the Sahara to an upper trading station on the river Senegal by caravans. It then extended to the Gambia and Rio Grande through the inland stations, and was at the same time present in the state of Bonadoo, 800 miles inland, betwixt the watersheds of the Niger and Gambia. The East Coast of Africa, from Abyssinia to the Portuguese settlements, has had a series of epidemics entirely apart from those of Egypt. Abyssinia is in constant communication with Arabia, and during the season of the N.E. monsoon, from December to March inclusive, Zanzibar has many arrivals from India, the Persian Gulf, and Arabia, from either of which cholera might be conveyed, to be spread from it southward by means of the native trading craft. The first visitation was in 1836-37, affecting almost exclusively the negro race. It crept along the coast north of Zanzibar, and from that port to the stations south of it, remaining only a few weeks in Zanzibar. The second visitation was in 1856. It was confined to Abyssinia. Arabia had suffered in the two preceding years, and Zanzibar was undergoing a heavy loss by small-pox in the same year. The third visitation fell in 1858-59, whilst Arabia was in an epidemic from Muscat to Djeddah. The disease appeared early in the monsoon in the ports south of Guardafui, and extended to Mozambique with great epidemic force. At the fourth visitation of 1865, the year of the last great epidemic that spread into Europe from Arabia, the disease showed itself very early in the year in Abyssinia, and at the fair of Berbera on the south shore of the Gulf of Aden. From this latter place it was conveyed by caravans to the coast of the Indian Ocean; but, being late in the monsoon season, it did not extend to Zanzibar. The fifth and last visitation of Zanzibar, in 1869-70, has been traced by Dr. Christie as far as the Galla country, travelling slowly southward among pastoral tribes. It seems not impossible that it may have been conveyed into Africa by the negro pilgrims of Soudan, called "the Takroories," or people of Tacrur, which embraces the fertile plains from the Nile to the Niger. This race was the first to suffer from the epidemic in Arabia, and they may have carried it home with them into the centre of Africa, from which it may have extended westward to Bonadoo by the course of the Niger, and southward by the Nile to the place where the Arab caravans from Zanzibar fell in with it, and took it back with them to that emporium, from which it was carried again inland by caravans that followed a more southerly direction, and northward by native craft to Socotra. In 1870 it spread southward as far as Quillimane, and seaward to the Cormoro Islands and Madagascar, and from it to Mauritius, an island that had on previous occasions been infected direct from India, or had grown its own epidemics of cholera. A remarkable feature of the epidemics of the East Coast of Africa is that they have, with the exception of that in 1865, arisen in the apogee of the great epidemic cycles, when about to cease

beyond the limits of Asia, and not when first issuing forth from them, which is strange if we consider its direct intercourse with India. The history of cholera in Africa bears very strong evidence to the theory that its spread is entirely regulated by human intercourse and timed relatively to the rapidity or slowness of that intercourse, Africa in this respect presenting the very antithesis of what is shown where mankind travel by steam power; consuming years in effecting as much as is there completed in months. In the African epidemics the native negro races have suffered incomparably more severely than the Arabs, Indians, or Europeans present with them. On the Mediterranean shores of Africa there have been repeated instances of the abortive introduction of the contagion of cholera, and others where epidemic intensity has speedily followed on apparently trivial importations. In Algeria the outbreaks have always followed on a history of importation, and they have been manifested in crowded hospitals, prisons, and barracks and camps, and evacuation of these, wherever it has been applied to such foci, has been invariably successful in cutting short the epidemic. Ample proofs have been amassed of the efficacy of strict quarantine in excluding cholera on the seaboard, although it has appeared in parts thus temporarily exempted after suspicion had ceased and quarantine relaxed, being introduced by a slower land intercourse.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 28.—*The Agency of the Mind in Etiology, Prophylaxis, and Therapeutics.*

By AUSTIN FLINT, M.D.

(*American Practitioner and New York Medical Record*, March 1.)

Professor Flint, in a practical paper on this subject, remarks: That the proper exercise of all the faculties of the mind, the sentiments as well as those belonging to the intellect, is the great requisite for mental health, and consequently for happiness.

Mental disorders not amounting to insanity, it seems to him, are not sufficiently considered by medical writers, and their importance is apt to be under-estimated by practitioners of medicine. These disorders not infrequently precede and lead to insanity; and there are grounds for the belief that timely attention to the former, on the part of the physician, would often prevent the latter. Those who give exclusive or special attention to the treatment of cases of insanity, do not, as a rule, see patients until after they have become insane. The treatment of mental maladies, which precede and lead to insanity, must devolve upon the general practitioner.

In so far as bodily health and vigor affords protection against disease the exercise of these sentiments is prophylactic. The state of the mind of a patient enters in many cases more or less largely into the prognosis.

To develop and maintain this, hope and confidence should enter, within proper limits, into the aims of the physician. In regard to the success in treating diseases and obtaining practice, the mental temperament of the practitioner has much to do in this matter. Some physicians are prone to look always on the dark side of cases. Others are distinguished for always taking the most hopeful view of cases; they look ever on the bright side. The effect is often more powerful than medication. There is an injudicious extreme in the latter direction, and between this extreme and the opposite there is a golden mean; but if there must be a deviation from this mean, it is desirable that it should incline to hopefulness rather than despondency.

Art. 29.—*On Constitutional Syphilis in its Relation to Psychosis.*

By Dr. Wille, of Zurich.

(*Annales Medico-psychologiques*, No. 1, 1872. *Annales de Dermatologie et de Syphiligraphie*, No. 5, 1872.)

This question, which has already been frequently treated by lunacy physicians, has recently become the order of the day of their studies, and, indeed, deserves all their attention, the more so as the clinical and pathological investigation of encephalic syphilis has much advanced corresponding psychiatric investigations.

Syphilitic psychosis presents itself under two forms—congenital intellectual weakness and an acquired mental malady; it is this latter form only that Dr. Wille has studied in his memoir.

Many points have yet to be elucidated in the history of the etiology of syphilitic psychosis. According to the personal observations of Dr. Wille, one meets with syphilis as a cause of mental alienation in from 2 to 2·5 per 100 of patients; it is probable, however, that the proportion is in reality much more considerable.

Dr. Wille has collected 77 cases, 11 of which were under his own observation.

The most frequent symptom of syphilitic alienation is progressive dementia with considerable loss of memory, but with ideas of dignity and of riches; this condition is in most instances preceded by a prodromic period of melancolico-hypochondriacal depression.

Acute syphilitic alienation may present all the known forms of mental maladies, and it frequently alternates with the condition of depression and intellectual weakness mentioned above. In addition, there are in almost all instances symptoms of physical cerebral disturbance, such as paralysis or hyperæsthesia of some cerebral nerve, hemiplegia, phenomena of irritation, convulsions, muscular trembling &c.; to these may be added also the characteristic cephalalgic pains.

Syphilitic mental alienation may break out immediately after infection, but it is often preceded by epileptico-apoplectic attacks, at the termination of which it is insensibly developed. Sometimes finally it presents itself in the form of mania, of acute melancholia, or of acute

delirium; but cases of this kind are very rare, for, as has been before observed, the affection most frequently occurs insidiously and with a chronic course under the form of progressive dementia.

These chief groups of syphilitic lunacy may be distinguished:

1. The simple irritative forms;
2. The forms with general symptoms of psychical disturbance;
3. The forms with symptoms of circumscribed organic changes of the brain.

The first of these groups is generally due to an anæmic condition of the brain, the second to morbid changes of the meninges and to general softening of the encephalon, whilst in the third there are circumscribed lesions, such as partial inflammatory softening, with an affection of the arteries (atheroma, thrombosis) and gummatous neoplasms, which seem to play the principal part. It should be added that the autopsy sometimes (even in cases where any serious cerebral symptoms have been presented) gives no explanation of the disturbances observed during life.

The diagnosis of syphilitic mental alienation is based upon the history of the case, the concomitant symptoms of constitutional syphilis, the physical and psychical symptomology, and the course of the affection, but very often the diagnosis is only a probable one. The correctness of the diagnosis becomes almost certain when the psychical disturbances are dispersed by a course of anti-syphilitic treatment, or when there has been decidedly made out a progressive paralysis with dementia in a patient above the age of twenty years.

With regard to the prognosis, this is favourable when the psychosis is primary and uncomplicated; cases in which there are convulsions or localized paralyses are doubtful; those which present symptoms of progressive paralysis are the most serious.

Anti-syphilitic treatment should not be very energetically applied at first. If iodide of potassium and mild mercurials do not suffice, recourse should then be had to inunction with blue ointment. A tonic and strengthening régime is always indicated.

In concluding his memoir Dr. Wille, relying on etiological, symptomological, and anatomical considerations, pronounces absolutely against the theory which represents syphilitic psychosis and progressive paralysis of the insane one and the same affection.

Art. 30.—*On Syphilitic Changes of the Encephalon.*

By Dr. Heubner.

(*Annales Médico-psychologiques*, No. 3, 1872; *Annales de Dermatologie et de Syphiligraphie*, No. 5, 1872.)

It is known what close analogy there is between syphilitic psychosis and general paralysis; some authors have even asserted that this latter affection is always the result of venereal infection. Experience proves the contrary; but still there are cases in which it is almost impossible to say whether one has to deal with syphilitic psychosis or with simple

general paralysis. Dr. Heubner has studied the symptoms which enable one, in many cases, to attain an almost certain diagnosis. Of these the following are the principal: Apoplectiform attacks, followed by hemiplegia and various disturbances of motility which are especially characterized by occasional very rapid and even instantaneous disappearance, as in hysteria; intense cephalalgia at the commencement of the affection; blepharoptosis, strabismus, and amblyopia: of these symptoms blepharoptosis is especially characteristic.

With regard to the anatomical changes Dr. Heubner has met with multiple thrombosis in the arteries at the base, and thickening, adhesions &c. of the dura-mater in the neighbourhood of those vessels. In cases where syphilomata exist, these are found between the pia-mater and the grey substance, and also along the course of the vessels, and excite adhesions of the dura-mater. Anti-syphilitic treatment will often be crowned with success, and it is the physician's duty to try it even in doubtful cases; for the prognosis of general paralysis is so unfavourable that, though success may not be obtained, nothing will be lost.

Art. 31.—*Experiments in Epilepsy.*

By Professor Brown-Sequard.

(*Cincinnati Clinic*, March 16, 1872; and *Edinburgh Medical Journal*, October.)

In a lecture recently delivered at Cincinnati, the author directed special attention to the phenomena of arrest of nervous activity, the most apt illustration of which is stoppage of the heart's action by a blow on the epigastrium, the shock being conveyed to the brain and reflected on the heart by the par vagum; and he pointed out that this arrest of nerve force by peripheric irritation was full of promise in explanation of the therapeutic action of remedies. He pointed out that, in guinea-pigs, and even in man, a current of carbonic acid gas forcibly directed upon the larynx sufficed very materially to abridge the duration of the fit, and in the animals at least—for opportunity was wanting to prove this in man—to cut short the disease. In cases induced by laryngismus, cauterization of the larynx has the best effect. In spinal epilepsy depending upon congestion of a limited portion of the dorsal division of the cord, the phenomena of arrest may be induced by the slightest form of peripheral irritation; in one case, by a smart pull at the large toe. The cure of sciatica in Corsica by cauterizing the ear is only another application of the same principle. And so also compression of the limbs, or binding them with a ligature—procedures sanctioned by long practice—acts on the same principle. We irritate certain nerves, and this irritation is transmitted to the cells of grey matter at the base of the brain and in the spinal cord. Formerly we thought that by acting thus we prevented something passing from the periphery to the brain; now we know that the action is just the reverse.

Art. 32.—*Nitrite of Amyl in Epilepsy.*

By S. Weir Mitchell, M.D.

(*Philadelphia Medical Times.*)

Two cases of epilepsy with distinct aura or other form of warning symptom, relieved by the inhalation of nitrite of amyl, are reported by Dr. Weir Mitchell.

He states that in another class of rare cases it may also prove of service. There are certain epilepsies in which the spasms last four hours, one fit following another. In these he commonly employs with succes injections under the skin of bromide of lithium, using thirty or forty grains in three or four localities; but he has twice checked these attacks at once by inhalations of the nitrite of amyl. In one of them there was a second fit, but no more, which was unusual. In the other, which lasted always several hours, the nitrite was used at the close of an hour in the third convulsion. Relaxation instantly occurred; the fit passed off, and no other followed. Ether has been frequently employed in this case, but it merely mitigates the attack, and its use has to be kept up for two hours.

Art. 33.—*Use of Phosphorus in Neuralgia.*

By S. M. Bradley, F.R.C.S.

(*British Medical Journal*, Oct. 26.)

Where the neuralgia is accompanied by much nervous waste, as is often the case in the nervous and sanguineo-nervous temperaments, Mr. Bradley recommends a couple of drops, equal to one-fifth of a grain, of the mother tincture of phosphorus in a little glycerine. Romberg calls neuralgia the cry of the hungry nerve for blood; it would perhaps be more correct to say, it is the demand for its special food, which is phosphorus contained in the blood. This at least seems the *modus medendi* which phosphorus affects in curing neuralgia.

Art. 34.—*On Heat Stroke.*

By Francis E. Anstie, M.D., F.R.C.P., Lecturer on Medicine at the Westminster Hospital School, Honorary Fellow of King's College, London, etc.

(*The Lancet*, Oct. 26.)

Heat-stroke, Dr. Anstie describes as acute poisoning of the nerve-centres with superheated blood.

The typical circumstances in which it occurs are, the fatiguing marches of troops through the heat of the day in a tropical climate

or the incautious over-exertion to which tiger-hunters will expose themselves under a similar sun-heat. It is by no means necessary, however, to encounter the direct rays of the sun in order to get heat-stroke. In fact some of the most disastrous outbreaks of the malady have occurred among soldiers packed in overcrowded dormitories or overcrowded ships, and case after case has happened in the night; and when once the temperature of the air is raised to an extreme height, it is certain that the foul atmosphere of crowded rooms or cabins is a powerful aggravator of the effects of mere heat. Stripped, however, of the accidental features which are thus sometimes introduced, heat-stroke essentially offers the phenomena of an acute paralysis of the nerve-centres generally, bearing with more or less of dangerous force upon the centres of respiration and of heart-movement. Two clinical forms are recognised by the authorities—the cardiac and the cerebro-spinal. In the former the course is rapid and the issue fatal almost from the necessity of the case; in the latter there is far more chance for life, and at any rate the end does not come so soon.

In the cardiac variety there may be no preliminaries whatever: in an English instance that came within Dr. Anstie's own knowledge (though not under his care), a labourer, making hay, was working with full vigour when he fell forward on his face and immediately turned over on his back; his eyes were wild and staring, he gave one or two sobbing inspirations, and died. It was conjectured at the moment that there must be cardiac disease, or else extensive cerebral hæmorrhage, but post-mortem examination showed the heart to b· healthy, and the brain free from any mischief except a trifling congestion. The skin just before death felt intensely burning to the touch, and remained so for some time after death. There are plenty of such cases recorded by Indian medical authorities. Sometimes, however, there is a short initial period, in which the patient is conscious of rapidly-increasing and oppressive bodily heat; the skin is dry and burning, the conjunctivæ congested, the patient's look is wild, and he complains of a feeling of distressing tension in his head, then suddenly there comes a fainting collapse, or a succession of faints, and death.

In the cerebro-spinal variety, which is the commoner, there is usually a distinct train of preliminary symptoms. Not only are there the sensations already described, but very commonly there is mental derangement, usually of the nature of hallucination; the patient is more or less delirious, and his talk is of some imaginary assailant, or of imaginary scenery &c. Occasionally he becomes dangerously furious, and homicidal or suicidal. A very common occurrence is that of frequent micturition. After a short time the patient becomes drowsy, lies down, and passes into a state of coma with stertorous breathing; the insensibility becomes more and more profound, the conjunctivæ more congested, but with a pink tint, the action of the heart tumultuous, the radial pulse quick and sharp and (if the case is going to end badly) very compressible; in many cases there are general convulsions, but in many others the patient lies motionless from first to last, and simply sinks out of life. In some cases of the cerebro-spinal form the symptoms of the cardiac variety are also present, and the patient's death is partly due to syncope.

Such are the phenomena of the more characteristic forms of heat-stroke as they are described by various Indian surgeons, and well summed up in the able article of Dr. Maclean (*Reynolds's System of Medicine*, vol. ii.), who has himself had abundant experience of the disease. But he calls attention to another form of the disorder, the true nature of which is very commonly ignored. It occurs in infants and young children, and, like the more typical varieties as observed in adults, may be equally produced by exposure to direct sun-heat, and also by extremely high temperature in bedrooms or nurseries, but only when the temperature of the general atmosphere is high. Under these circumstances the perspiratory action of the skin, which may up to that time have been excessive, suddenly ceases, and is replaced by dry burning heat of the surface. This is soon followed by further disturbance, which most commonly takes the form of *diarrhœa*—an interesting circumstance, because acute heat-stroke in the adult is nearly always accompanied by obstinate *constipation*. Unless the moisture of the skin be speedily restored there is very soon profound affection of the nervous centres, which usually takes the form of general convulsions; between the attacks the patient lies listless, with closed eyes, or absolutely comatose. He may either sink away in profound coma, or may suddenly start up in the nurse's arms, with blanched face and dilated pupils, take two or three gasping inspirations, and die in syncope. Now these attacks very commonly occur in infants who are teething, and it is sadly frequent for the whole blame to be laid on dental irritation, the poisonous action of superheated blood being ignored, and the whole treatment being directed to the relief of a supposed tension of the gums, and to quieting the nervous system and checking the diarrhœa by sedatives and astringents. A far more excusable mistake, and one which it is sometimes impossible to avoid, is the supposition that the child is labouring under the early symptoms of a specific fever.

With regard to the general principles of the treatment of heat-stroke the author says these appear to be very plain; and, fortunately, experience bears out the conclusions of common sense. In the first place, we must remove the patient instantly to a cool place and strip him. In the cardiac variety, with syncopal tendencies, we are confronted with the danger of instant death, and our first care is to rouse the action of the heart and the respiratory muscles; accordingly we place the patient in an empty tub or hip-bath, and pour cansful of the coldest water we can get over his neck and shoulders and chest, place ammonia to his nostrils, and (if he can anyhow swallow) pour small quantities of half-and-half brandy and water down his throat. Once the immediate danger from syncope is over, our next care is to carry out a rapid reduction of the temperature of the blood, and for this purpose we either repeat the cold douche at short intervals, or "pack" the patient in a sheet dipped, and frequently redipped, in water with lumps of ice in it, or put him in a bath of water of 90°, which we then cool down (by the addition of ice or cold water) to about 62° in the course of twenty minutes or half an hour. The duration and frequency of repetition of either of these means of applying external cold must be regulated by the frequent use of the thermometer, the point being to keep the bodily temperature at least as low as 102°, but never to reduce

it below 97°. Often it will rise again and again, during several hours, and we ought never to be satisfied till it stands permanently at not more than 99°. It is necessary, however, to bear in mind the caution given by some of the best Indian observers, not to persist with the douche when it produces a clammy state of the skin, with sighing respiration; and if, for these or other reasons, we cannot apply continuous external cold, it becomes necessary to think of other measures for reducing the temperature. We may try Dr. Parkes's plan of injecting ice-water into the rectum, or we may try to get the skin to act again by medicines. Dr. Maclean says that nothing in this way is so powerful as the secret medicine called Warburg's tincture; but if we should be unable or unwilling to use this, it is probable that the tincture of aconite will effect all that it could do, for aconite is an exceedingly powerful sudorific. It should be given in the method of small doses very frequently repeated; a single drop of the tincture every five minutes at first, and afterwards at intervals of ten minutes, twenty minutes, an hour &c. In this way we get a strong and continuous action on the skin without provoking tonic cardiac symptoms. The patient must be supported from the first with frequent food and small doses of brandy (two drachms every hour).

The cases attended with convulsions have been found to bear the douche very ill; it irritates and exhausts them too much. Dr. Tuke suspects it would be better to apply the whole bath gradually cooled down in the manner already described; but chloroform should be previously given, in just sufficient quantity to still the spasms, for which purpose it has been found very useful.

It is easy to make up one's mind to the simple and rather heroic line of treatment above described in the instances of adults attacked with the typical form of heat-stroke; but it is not so easy to carry out, with determination, a similar method for children and infants attacked with the heat-stroke—diarrhœa with convulsions or coma. Yet this is doubtless the true principle to go upon, and Dr. Anstie has acted upon it with great success in three instances—in two of these by the application of external cold (once douche, once cooled bath); in the other, the child seeming very feeble, he employed tincture of aconite in the numerous small doses above described—and the general impression left on the author's mind is that the old routine treatment of infantile summer and autumn diarrhœa ought to be entirely abandoned in the cases where there is pungent, dry heat of skin, and the evidence of previous great exposure to heat. And it may now be said, from accumulated experience, that this treatment would do no harm even if by chance it happened that the disease were not heat-stroke, but the early stage of some specific fever—provided, of course, that the cooling process be carefully guarded by the constant use of the thermometer.

The prophylaxis of heat-stroke rests, of course, upon very obvious principles, though these are constantly neglected in this country. The natural craze for sending all children indiscriminately to the sea-side, where they fry upon the hot sands all day long without adequate covering either for the head or neck, leads to a considerable amount of mischief of this kind. On the contrary, in India and other countries where heat-stroke would otherwise be very common, the inhabitants

readily protect themselves by loose garments of non-conducting material, and especially by light but thoroughly non-conducting coverings for head and spine, from the effects of direct exposure to the sun. Of equal importance is the avoidance of overcrowding and bad ventilation of sleeping-rooms in hot weather. But it should specially be remembered that great fatigue is a most powerful additional predisposer to heat-stroke, and that very much less of actual exposure to high temperature will produce the latter in a previously exhausted than in a comparatively unfatigued man.

One of the most important matters on which Dr. Anstie dwells is the *sequelæ* of heat-stroke. There may be no such consequences, but there very commonly are; and some of these are very serious, and require to be dealt with in a particular manner. One of the commonest sequelæ is epilepsy; and there are some cases of epilepsy after sun-stroke that are very mild. It is to these, probably, that Dr. Maclean refers when he says that epilepsy after sun-stroke is usually curable merely by removal to a milder climate. But there is a very considerable number of instances in which genuine heat-stroke was followed by a few attacks of epilepsy, which almost or altogether ceased on the patient's arrival in England; nevertheless, there remained behind a state of brain which was altogether peculiar. In the first place, these patients nearly always showed marked impairment of memory, though that impairment might be very unequal as regarded different sorts of memory. Secondly, they are often intensely irritable, and it is not safe to calculate their probable conduct under certain strains and provocations on the same principle as you would calculate that of ordinary folk. Thirdly, a man who has once had genuine heat-stroke is almost always quite unfit to be allowed to taste a single drop of alcohol; that substance has become a deadly poison for him, and even its moderate use, if persisted in, will very likely reduce him to a condition of insanity. We are not too lightly to accept the assertion that a patient "has had a sun-stroke;" many who say this have never so suffered at all, but have been *drinkers*, or have had syphilis with tertiary symptoms affecting the brain; and both these causes indefinitely heighten the tendency to subsequent mischief, and also the morbid irritability to alcohol. The mildest cases even of genuine sun-stroke require much after-care. The skin, as Dr. Maclean shows, is long in recovering its activity of function, and it is very necessary to hasten this recovery by very diligent frictions, baths, and shampooing. The bowels often remain obstinate, and sometimes even a course of faradisation (negative pole in rectum) will be advisable, in order to assist in restoring their tone. Obstinate *headache* is also sometimes a very troublesome and intractable sequel of heat-stroke. Dr. Maclean says that iodide of potassium and prolonged counter-irritation to the nape of the neck sometimes relieve; but sometimes, also, nothing appears to do any good. Dr. Anstie is inclined to believe that a rather prolonged course of cod-liver oil offers the best chance.

Art. 35.—*The Local Distribution of Insanity.**

By T. S. Clouston, M.D.

(*British Medical Journal*, August 24.)

After pointing out that a comparison of the last report of the Commissioners in Lunacy and the preliminary Report of the Census of 1871 showed that the rural agricultural districts had far more lunatics in proportion to the population, Dr. Clouston said that the increase for the whole of England and Wales, between 1861 and 1871, was 13·15 per cent. An examination of the counties that were decreasing or most markedly stationary, and the counties whose decimal rate of increase was far above the average, led to the conclusion either that the causes of a decreasing or a stationary population were also the causes of increased lunacy, or that the process of movement of the able-bodied, healthy population, from one county to another, left a great excess of lunatics in the districts from which such emigration took place. But a further comparison of the Commissioners' and Registrar's reports showed that this would not be an entirely correct inference. With regard to the classifications of insanity he had selected the reports of fifteen asylums: five of counties chiefly agricultural—viz., Cumberland and Westmoreland, Wilts, Worcester, Somerset, and Salop; five urban—viz., Newcastle, Liverpool, Birmingham, Bristol, and Surrey; and five with a considerable mixture of each element—viz., Glamorgan, Stafford, Durham, Sussex, and Hants; and of the patients admitted for the five years beginning with 1866 he found that those suffering from congenital insanity were 5·6 per cent. in the rural, 3·2 per cent. in the urban, and 4.8 per cent. in the mixed and urban. The insanity dating from birth was, therefore, far more frequent in the country than in towns. The epileptic insanity was in proportion to the whole 9·4 per cent. in the rural, 8·2 in the urban, and 5·6 in the mixed rural and urban. Thus the rural still predominated in the production of this kind of insanity; but on turning to general paralytic insanity its proportion was only 3.6 per cent. of the whole, while the urban stood at 9·4 and the rural-urban at 9·7. Puerperal insanity stood in the rural asylums at 3·6 per cent., 2·6 in the urban, and 3·9 in the rural-urban. Of the causes of insanity hereditary tendency stood first on the list. It acted both as a predisposing and an exciting cause of malady. Next in order of importance stood intemperance, which acted as a direct exciting cause. The abuse of alcoholic stimulants might be the cause of almost all the varieties of insanity, but general paralysis was more frequently caused by it and by sexual excesses than by anything else. This quite explained the great preponderance of this disease in the asylums of the urban, mining, and manufacturing counties. It depended least on hereditary predisposition, too, of all the varieties of insanity arising *de novo* as the result of its exciting cause. The causes of insanity, when carefully looked into, were by no means most commonly mental shocks, disappointments in

* Read before the British Medical Association.

love, and distresses, as was generally supposed. Mental and moral causes that distinctly affected the mind were only one third of the physical causes in the fifteen asylums he had mentioned. Is insanity increasing? was a question often asked now-a-days, and there was a decided popular belief that it was increasing very rapidly amongst us. However, taking all the facts which appeared to bear out an affirmative answer to this question, and contrasting them with the facts on the other side, he thought the conclusion might be arrived at, on very definite grounds, that insanity was really not increasing amongst us.

Art. 36.—*A Case of Hysterical Ischuria.*

Under the care of M. Charcot, of the Hospice de la Salpêtrière, Paris.

(*Gazette Médicale de Paris*, No. 21, 1872.)

"The patient was a woman who for more than ten years had been affected with hysterical attacks and various hysterical symptoms. In April, 1871, there occurred in this patient a remarkable diminution of the urinary excretion. For a long time M. Charcot remained sceptical; the recollection of celebrated cases in which deception had been finally found out (that of Supton for example) kept up his distrust. In order that the reality of the case should be placed beyond doubt he thought it necessary to order an observation, which was prolonged for some time and carried out with minute precautions. The woman was affected with contraction of all the limbs, which was absolute both when she was sleeping and when awake, and resisted chloroformization. She was therefore confined to her bed and could not make use of her limbs. She was, however, carefully watched by several female nurses. Still the quantity of urine which was withdrawn through a catheter (the woman was affected with complete retention of urine) never during several months exceeded twenty grammes daily; sometimes, indeed, for several days there was complete anuria.

"At the same time this woman vomited daily between one and two thousand grammes of fluid which contained urea. After a few months had passed the ischuria was followed by temporary polyuria, and the vomiting then ceased; it afterwards returned, and at the commencement of the present year there was again diminution of the urinary excretion, this time without anuria, but accompanied by vomiting, less abundant than it was during the previous stage. The following is the daily average calculated from the results of twelve days' observation during the months of March and April: —

Vomited fluid, 362 grammes, containing 2 grammes of urea.
Urine, 206 grammes, containing 3 grammes of urea.

"The woman *never* sweated; consequently the excretion of urea by the skin was insignificant. The fæces were not analysed; but as there was constant constipation it may be concluded that urea could not have been eliminated in very considerable quantities by the intestine. It

may be asserted, then, that during several months this patient excreted daily but a few grammes of urea.

"Notwithstanding this anomalous state of things, the general health remained good. No symptoms were presented analogous to those which are observed in patients whose urinary excretion is insufficient. Moreover, the analysis of the blood made by Mr. Gréhaut demonstrated that the amount of urea was normal. It must be admitted, then, that in this patient, who, it may be stated, took very little food, the production of urea was much less considerable than in the normal condition.

"M. Charcot considered the question whether this singular ischuria could be due to spasm of the urethra, and, relying upon physiological data and on the results of the clinical observations of Dr. Roberts, of Manchester, answered this in the negative. For if the urethra be obstructed either by deligation, as was tried in an animal by Max Hermann, or by a calculus, as may occur in man, the urine at the same time that it is excreted less abundantly, becomes very watery, which did not occur in the present case. The unknown cause, then, of the ischuria in this woman resided in the kidneys.

"This case shows that hysterical ischuria, the occurrence of which has been too complacently admitted by certain old authors, has a real existence, and that the well-known cases of deception ought not to cast disparagement on guaranteed observations. M. Charcot is inclined to think that certain forms of vomiting called hysterical met with in young women affected with ischuria may really be supplementary to the renal function. Rare pathological cases ought not to be merely baits for vain curiosity; when illuminated by physiology they may explain common facts an interpretation of which had been previously wanting because these were not sufficiently decided; in the same manner certain eccentric types assist naturalists in filling up certain gaps in the geological scale."

Art. 37.—*Cerebral Tumours Giving Rise to Convulsions and Paralysis.*

By James Broadbent, M.D., F.R.C.P., Physician to St. Mary's Hospital.

(*The Lancet*, June 22.)

At a meeting of the Clinical Society of London on May 24th, Dr. Broadbent related a case in which tumours in the occipital lobe and in the posterior ascending parietal convolution of the right hemisphere had given rise to convulsion and paralysis of the left half of the body. The patient, a bootmaker, aged sixty-five, was admitted into St. Mary's Hospital on October 15th, 1871. He had been in good health up to October 7th, when he had convulsive movements of the left arm; afterwards he had pain in the head; and on the day before his admission the entire left half of the body was violently convulsed, and he was sick, but never lost consciousness. The convulsions ceased in a few days,

leaving the limbs completely paralysed, and sensation was diminished. Afterwards he had painful nervous attacks in the left arm and leg, but they gradually recovered power, till on November 10th he had pains in the head, and torpor, gradually deepening into coma, came on. He regained consciousness, however, after the application of a blister to the forehead, and remained very weak, and the paralysis of the left limbs was almost complete. He died on November 30th. His mind was quite clear, except for a short time. The back of the eye could not be examined on account of opacities in the lens. Two gliomatous tumours were found; one about the size of a cobnut in the upper part of the second ascending parietal convolution of the right hemisphere, projecting from its surface; the other, about the size of a small orange, was embedded in the occipital lobe, not appearing on the surface at any point. Dr. Broadbent thought the tumour in the parietal convolution was probably the cause of the unilateral convulsion and paralysis. Interesting points in the case were—the short time during which the symptoms had existed, only seven weeks; the instant relief of stertor when the patient was turned on his side, as recommended by Mr. Bowles, of Folkstone; and the recovery from coma after the application of a blister to the forehead; the tumours of course remaining, and probably increasing.

Art. 38.—*Incomplete Hemiplegia of the Right Side, with Partial Aphasia.*

By J. Lockhart Clarke, M.D., F.R.S.

(*British Medical Journal*, June 15.)

The following case is placed on record by Dr. Clarke:—

"A lady who had come from the country to see her daughter found, in the course of a few days, that she was gradually losing the use of her right hand and arm. The first occasion on which she experienced this weakness was that one day, after beginning to write, she found herself unable to continue. Very shortly afterwards she found that she was losing power in the right leg, so that she had great difficulty in walking; she also felt a sensation of 'pins and needles' in the right hand, but not in the foot; at the same time she complained of great loss of memory. She was frequently quite unable to recollect many of the words she wished to use; and sometimes she transposed her words or used wrong ones. Her articulation was very indistinct; but she could protrude her tongue and move it in any direction. There was a dull 'heavy' pain on the left parietal region of the head, with a sensation of 'creeping or drawing up' of the scalp, and some deafness of the left ear. There was no cardiac murmur, or any other sign of heart-disease.

"Her general health was much deranged. Her tongue was loaded; her breath offensive; her appetite was gone; and she complained of nausea and flatulence, with a sensation at the epigastrium 'as if something wanted to be removed.' Her skin was dirty-yellow; her bowels constipated; but her urine was clear and without albumen. She was

ordered a mild aperient, a blister behind the left ear, and the following pills: ℞ Hydrarg. subchlor. gr. vj; ext. hyoscyam. ʒijss. Ft. pil. xij. One to be taken night and morning.

"At the end of a week I saw her again, and found her decidedly improved. After two or three days the pills produced brisk purgation. She was ordered to repeat the blister and continue the pills. At the end of another week the improvement was still more marked. Her memory was much better, her articulation more distinct, her right arm stronger, and she could walk without much difficulty; but she still complained of dull pain, and 'drawing up' of the scalp on the left side of the head. The bowels had acted about twice daily, and the evacuations on passing caused a scalding sensation. The blister was repeated and the pills continued. At the end of the third week she was nearly well; all that she complained of was flatulency, and the creeping or drawing sensation in the scalp on the left side. Her skin had lost its previously dirty-yellow colour and her appetite was keen. She was ordered to discontinue the pills, and to take some rhubarb, ammonia, and ether in peppermint water. A fortnight afterwards she returned to the country quite well."

Art. 39.—*On Diseases of the Medulla Oblongata.**

By M. Bourdon.

(*Archives Générales de Médecine*, Mai, 1872.)

The author, after having collected the cases hitherto published, adds to these a certain number of cases that occurred under his own observation. These cases are divided into three groups.

In the first group are ranged those cases in which the anatomical lesions involved the anterior region of the medulla. These consist, in the first place, of sections or lacerations caused by injury or spontaneous hæmorrhage. The result is either sudden death or opposite hemiplegia; the hemiplegia, however, may be direct in cases where the lesion has a certain situation.

When the nervous elements have undergone degeneration, are partially destroyed, or are simply compressed, very diverse forms of disturbance of motility may be observed; sometimes there is chronic trembling, showing itself exclusively during voluntary movements, at other times a continuous rhythmical trembling, and at other times again intermittent contractions, convulsive spasms, or veritable epileptic crises. All these phenomena, however, have this in common, that they occupy the four limbs, the trunk, and the face; that they extend sometimes to the tongue, the velum palati, and even to the organs of respiration; and, finally, that they are accompanied by no disturbances of sensibility, of the senses, and of intelligence.

In those cases there is no interruption to the passage of the nervous influence, as in cases of solution of continuity; there is only incom-

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* Communicated to the Académie de Médecine.

plete or intermittent transmission of the motor excitations, or morbid irritation of the nervous elements.

Together with these observations are found three cases in which, though there was more or less complete destruction of both anterior pyramids and olivary bodies, no disorders of motility were manifested in the limbs.

M. Bourdon explains the absence of these symptoms by statements from the works of Stilling and Lockhart Clarke, which have been verified by the icono-photographic researches of M. Duchenne. It is established at the present day, thanks to these anatomists, that the anterior pyramids are not, as was formerly supposed, the prolongations of the anterior columns of the cord, but that they are formed by the fibres which come from the central and posterior parts of the bulb. If it be considered that below the pyramids, and in the centre of the organ, there exist cells bound together by superior and inferior prolongations so as to form an uninterrupted vertical chain, and that there are also between these cells longitudinal nerve fibres which are very numerous at the sides of the medulla, where they represent the antero-lateral columns of the cord, one may understand that all these elements, if they have not undergone any morbid change, may serve to transmit motor excitations when the anterior parts of the medulla have been even completely destroyed, as in a case described by Velpeau.

In the second group M. Bourdon has collected all the cases in which the morbid changes were more central and approached the floor of the fourth ventricle. The anatomists quoted above have discovered in these regions small masses of cells forming the motor origins of the hypoglossal, spinal accessory, facial and pneumogastric nerves. Any lesion attacking these nervous centres would cause functional disturbance of the organs placed under their influence. Indeed, according to the important microscopical researches of M. Charcot, atrophic degeneration of these cellular nuclei is the anatomical characteristic of labio-glosso-laryngeal paralysis.

M. Bourdon repeats the description of this lesion, which is still but little known, and then remarks that it occupies exclusively the nuclei of origin of several nerves which are associated for the accomplishing of certain functional actions, as the articulation of words, deglutition, and phonation. He points out that progressive degeneration from below upwards, and the successive appearance of the paralytic phenomena, lead him to presume, and to explain with M. Duchenne, that the lesion cannot exceed the limits of the pneumogastric without causing death by arrest of the respiration.

The author then shows that the collection of symptoms presented by labio-glosso-laryngeal paralysis may be due to other lesions than atrophy of the cells forming the nuclei of origin of the nerves of the medulla; such a lesion, for example, as softening, which may occur spontaneously, or under the influence of an obliteration of the vertebral arteries, as in two cases of embolism reported by M. Proust.

Tumours situated externally to the medulla or meningeal exudations may compress the organ and determine similar lesions. But in all these cases the course of the labio-glosso-laryngeal paralysis is not more regular; moreover, sooner or later paralysis occurs of nerves

which are not ordinarily attacked in the affection described by M. Duchenne.

In the third group are placed those cases in which the posterior parts of the medulla were diseased. These parts represent the corresponding regions of the spinal eord, and lesions here may give rise to disturbances of sensibility and of co-ordination of movements.

In his researches on locomotor ataxic M. Bourdon was struck by the appearance, in the midst of the ordinary symptoms of the malady, of unexpected phenomena in the pharynx, larynx, and organs of respiration, when degeneration of the posterior columns of the cord had extended to the restiform bodies.

Dr. Feréol has made these phenomena, which he calls laryngo-bronchial, the subject of a very interesting work; he attributed them to a lesion of the medulla, but can record only one autopsy, that of the case of M. Cruveilhier, which M. Bourdon had previously reported as an example of sclerosis of the cord extending to the region of the medulla.

In dealing with the question of diagnosis the author acknowledges that, though it is tolerably easy to make out the diseases of the central and posterior regions of the bulb, as their symptoms are very characteristic, it is not the same with affections of the anterior regions. As these include the nervous elements charged with transmitting motor excitations from the brain to the organs of locomotion, one would naturally observe similar disorders of motility in the diseases of the cord, on the one hand, and in affections of the medulla oblongata and cerebral peduncles, on the other.

Now comes the differential diagnosis between diseases of the medulla and diseases of these different organs. With regard to the common symptoms belonging to morbid changes of the medulla, M. Bourdon observes that they are generally associated with paralysis of other nerves than those which spring from this organ, as, for example, the auditory, the sixth nerve, the trigeminal; one may also observe at the same time nystagmus, sometimes glycosuria, albuminuria, and frequently, according to M. Larcher, disorders in the intellectual faculties, all symptoms which do not pertain to diseases of the medulla.

Where the anatomical morbid changes involve the cerebral peduncles, the longitudinal bundles of which divide and separate, in order to reach their corresponding hemisphere, the disorders of movement take on a unilateral character, and one may find paralysis of the third nerve and visual disturbances, due either to extension of the lesion to the quadrigeminal tubercles, or to simple irritation of these organs.

M. Bourdon, in concluding, remarks that the paralysis of this or that encephalic nerve, when added to the symptoms that are common to several affections, is capable of casting much light upon the differential diagnosis. These nerves being connected at their origin at the superior part of the spinal axis from the inferior extremity of the medulla as far as the cerebral peduncles, their paralysis will indicate more or less exactly the point at which the anatomical lesion exists.

The olfactory and optic nerves are the sole exceptions, as these take origin from the cerebrum; so paralysis of these nerves has not been noted in any of the cases included in M. Bourdon's memoir.

From this study the author would conclude that though lesions of the

anterior portions of the medulla oblongata may not manifest themselves by symptoms sufficiently characteristic for the purpose of diagnosis, and though one is obliged, in order to establish the diagnosis, to rely upon other considerations beyond these symptoms; on the other hand, morbid changes in the central and posterior parts of this organ give rise to symptoms which are sufficiently pathognomonic to enable one to diagnose them with almost complete certainty.

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 40.—*Muriate of Ammonia in Bronchitis, Catarrhal Pneumonia &c.*

By H. C. WOOD, Jun., M.D., Philadelphia.

(*New Remedies*, April, 1872.)

In obstinate acute bronchitis, after the first intense stage; in catarrhal pneumonia, both of children and adults; in bronchorrhœa, and also in ordinary chronic bronchitis, Dr. Wood has obtained more apparent good from the use of muriate of ammonia than any other remedy. The best formula for giving the muriate with which he is acquainted is as follows: ℞ Ammoniæ muriat. ʒij; ext. glycyrrhiz. ʒj; mucil. acaciæ, aquæ, āā fʒiij. M. S. Tablespoonful for an adult every two hours; teaspoonful for a child a year old every three hours.

When patients object to the mixture of sweet and salt, the following is to be preferred: ℞ Ammoniæ muriat. ʒij; aquæ, fʒvj. Dose as before.

When the cough is very annoying $\frac{1}{20}$ of a grain of sulphate of morphia, or 10 to 15 minims of tincture of hyoscyamus, may be added to each dose.

In bronchorrhœa the following may at the same time be used by inhalation twice or thrice daily. Take of Sat. solution of alum, ʒvj; tr. hyoscyamus, ʒss. M.

ART. 41.—*Carbolic Acid Inhalations in Chronic Bronchitis.*

By JOHN A. LIDELL, M.D.

(*New York Medical Record*, July 1.)

In a bad case of chronic bronchitis—a case in which there was strongly marked bronchiectasis on both sides, harassing cough both by day and night, profuse muco-purulent secretion that oftentimes was very offensive in smell, and emaciation with other general signs of bronchial phthisis, the writer has recently administered carbolic acid by inhalation, and made the patient comfortable by so doing, when every other palliative had failed.

At first it was given in the vapour of hot or warm water; but, after

a short trial, these inhalations were discontinued, because they made the patient perspire too much. Then it was administered in the form of spray with Codman and Shurtleff's atomizing apparatus No. 5, and the result was gratifying in every respect. The preparation which was used most consisted of the crystallized acid dissolved in water in the ratio of one grain of the former to one ounce of the latter, that is, 1 part of the acid to 480 parts of water. Trials were also made with a solution as weak as 1 part to 600, on the one hand, and as strong as 1 part in 300, on the other, but those having a strength of 1 part to 450 or 480 answered best. The patient was made to breathe or inhale the spray with deep inspirations, from five to ten minutes at a sitting, unless a feeling of drowsiness were sooner produced, once a day usually; twice a day, however, when the expectoration was very profuse or offensive in smell.

Art. 42.—*A Remedy for Catarrh.*

By E. Brand, M.D.

(*Wiener Med. Wochenschrift*, June 15, 1872.)

Dr. E. Brand speaks in terms of recommendation of the following formula for an anticatarrhal olfactory, prescribed by Dr. Hagner; ℞ Carbolic acid, 5 parts; rectified spirits of wine, 15 parts; strong solution of ammonia, 5 parts; distilled water, 10 parts. The mixture is kept in a stoppered dark glass bottle. When a catarrh is commencing a few drops are placed on three or four layers of blotting or filtering paper; the patient, holding this in his hand and closing his eyes, inhales deeply from it as long as any smell is perceptible. The effect of the treatment is to cut short the acute stage of the cold, to prevent the occurrence of subsequent coryza and bronchial and laryngeal catarrh, while all troublesome symptoms are rendered much milder. The remedy should be applied every two hours.

Art. 43.—*Treatment of Diphtheritic Croup.*

By F. W. Bartlett, M.D.

(*Buffalo Medical and Surgical Journal*, and *The Medical Record*, July 15.)

In a paper on "Diphtheritic Croup and its Treatment" read before the Buffalo Medical Association, by Dr. Bartlett, several cases of diphtheritic croup are detailed, in which a small blister over the nucha, and common salt dried and powdered, blown by the aid of a tin tube into the fauces, were of great service to the patients in relieving the croupal distress. It is important not to heal the blister by any application. Let it heal in its own way. If a blister is to be applied it should be at the earliest possible stage of the malady, so as to arrest, if practicable, the initiatory morbid changes in the mucous membrane of the larynx and the trachea. In later stages of the disease it is far less likely to

succeed, and if successful, the respiration and voice particularly are much more slowly restored. It is to prevent suffocation that the trial of the revulsive and eliminating plan is urged.

Art. 44.—*On the Bending of the Ribs in Forced Expiration.**

By A. Ransome, M.D.

(*Medical Times and Gazette*, August 24.)

The author called attention to the great extent of the forward motion of the ends of the upper ribs during forced respiration. This fact has been ascribed to the angular upward movement of the ribs from an oblique to a more horizontal position. That this explanation does not suffice was proved (1) by reference to the normal angles made by the ribs with the spine, (2) by a comparison between the proportions of the upward to the forward movement of the ribs, and (3) by the varying relations between the three dimensions of this motion. It was shown that a portion of this forward push is due to the inbending of the ribs during the forced expiration preceding inspiration—(1) By actual diametric measurements with callipers, (2) by the large proportionate motion of the more flexible upper ribs, (3) by noting the extent of this movement in women and children, and its diminution as age advances, and (4) by several pathological facts. The bearing of the subject upon practical medicine was briefly indicated.

Art. 45.—*On Thoracentesis for Empyema in Infants.*

By M. Roger.

(*Archives Générales de Médecine*, Août, 1872.)

The following remarks were made in the course of a discussion on thoracentesis and empyema held by the Academy of Medicine, Paris:

1. In acute cases, if the effusion be abundant and if serious general phenomena persist without amendment, one ought to operate without delay; that is to say, as soon as one has reasons for suspecting the formation of pus.

The surgeon should at first make one or two punctures with the aspirator, followed or not by washing out of the pleura. If the effusion is slowly produced and in small quantities recourse may be had to the employment of the same means. But if the collection accumulate in considerable quantities the surgeon ought not to wait, but should establish a pleuro-cutaneous fistula with continuous flow. For this purpose the best proceeding is to place a silver canula in the thoracic wall; through this canula one may wash out the pleura more or less repeatedly, until the retraction of the abscess and the reduction of the discharge to a small quantity of serous fluid indicate removal of the apparatus.

2. The course to pursue in cases of chronic empyema is much like that

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* Read before the British Medical Association.

just described for the treatment of acute empyema. However, when the purulent effusion is of old date the modifications of structure presented by the pleura are too profound to justify one in expecting to cure the infants with one or two operations of thoracentesis, even when followed by injections containing iodine. It will consequently be necessary to determine very speedily to introduce a canula and retain this.

3. If in the course of an acute or chronic empyema spontaneously terminated by formation of a vomica symptoms of suppuration should continue, if the evacuation of pus be difficult, or if pyo-pneumothorax should occur, it will be better after a short period of expectation to establish a pleuro-cutaneous fistula. With this object in view one would have recourse either to puncture, followed by the insertion and retention of a canula, or even by incision of the wall of the thorax.

The surgeon ought to have recourse to a similar incision if, by reason of persistent physical signs and of incomplete evacuation of the fluids contained in the pleura, he should suspect the presence of thick products (false membranes or hydatid cysts) which cannot be withdrawn through the metallic canula.

4. If it should have been concluded from the collection of symptoms that the pleurisy is of a tuberculous origin, this would be no reason for inaction; on the contrary, it would be necessary to operate, for, a positive diagnosis being in many cases almost impossible, one ought not to neglect a chance of cure, however slight it may be. Even in cases of certainty the medical attendant has no right to remain inactive. If the dyspnœa be very great, and if the general symptoms be aggravated, intervention may be attended with advantage, since the fatal termination is imminent from the very fact of the purulent pleurisy being left to nature. Evacuation of the effusion is always favourable to the patient, and the suppression of so grave a complication would at least retard a fatal issue.

In a second portion M. Roger studies the indications for thoracentesis in serous effusions of the pleura, and he shows by cases that under these circumstances puncture of the chest is never, so to speak, a necessary operation with infants. Indeed, his own cases, as well as those of M. Barthéz, enable M. Roger to establish as an almost absolute rule that recovery from simple non-purulent pleurisy is constant. This is owing to the fact that one never observes in infants either sudden death from syncope or simple chronic pleurisy.

Art. 46.—*Treatment of Pleurisy.*

By Francis E. Anstie, M.D., F.R.C.P.

(*A System of Medicine*, vol. iii., 1871, 8vo, pp. 968.)

"The treatment of pleurisy," Dr. Anstie writes, "is naturally divided into that of the primary and that of the secondary forms.

"Primary pleurisy, of a well-marked type, is perhaps as little the fit subject of treatment by drugs or other artificial means, in its acute

stages, as any disease that could be named, or rather, the drugs needed are very few, and are all of the stimulant-narcotic class. For the vast majority of patients, indeed, the only drug which is of considerable value is opium in one or other form, until the febrile period is passed over, when preparations of iron sometimes become very useful. I do not make this statement without having carefully watched and considered the effects of a number of internal remedies which are still used as a matter of course, and, indeed, considered essential by various physicians of good repute.

"To take, first, the case of primary simple fibrinogenic pleurisy, one may at once decide against all heroic remedies, since evidence abounds on all sides to show that the disease is a perfectly harmless one, unless the patient has strong tendencies to constitutional disease, and that it tends always to recovery. In fact, one has no need to adopt any treatment whatever beyond keeping the patient in one room, free from draughts, and in the posture which he finds easiest to him; feeding him steadily with nutritious food of the kind best adapted to the degree of fever and digestive derangement that may happen to be present; forbidding unnecessary movements and talking; applying hot poultices to the side, and administering an occasional hypodermic injection of $\frac{1}{6}$ or $\frac{1}{4}$ grain morphia to keep the pain in check. Acetate of ammonia, in doses just short of those which produce decided sweating, will sometimes greatly relieve the pain and distress even without the aid of opium, and is at all times a harmless, even if an unnecessary medicament. Recently, the acetate of methylamine (a base which exists in roasted coffee, owing to the transformation by heat of a part of the caffeine) has been proposed, and apparently used with good effect, by Professor Béhier, of Paris. There is usually no necessity for alcohol, and it had better be avoided. After some six or seven days in bed, the patient will probably be well able to sit up; and the only thing necessary to forbid him is *movement*. He should sit perfectly still. If any anæmia remains, the tincture of muriate of iron in twenty-minim doses, thrice daily, is advisable as a tonic; and, on the whole, a very few days ought to see the patient completely fit to resume his ordinary work.

"In pleurisy evidently of considerable extent, and with a notable amount of *serous effusion*, the ideal of treatment should be still, as much as may be, that given above. It is now very decidedly proved that the old heroic methods of attacking severe pleurisy ought to be abandoned. In the first place, as to general blood-letting. I have witnessed enough of this treatment to be sure of two things: firstly, that the older physicians were perfectly right in the statement that it usually relieved *pain* with great promptitude; and secondly, that the relief thus given is not in the least degree superior to that afforded by hypodermic injection of morphia, except that it operates more quickly, perhaps by some five minutes, than the latter. As to bleeding checking the tendency to effusion, *that* is to me quite incredible. No such effect has been witnessed in either of the five cases of phlebotomy for acute pleurisy that I have watched at various times: and I observe that Dr. Aitken, while still adhering to the use of this remedy, recommends us not to be discouraged by the fact that the effusion may go on increasing after the bleeding, and the patient also may feel very depressed. It is true, he says, that

after a certain time absorption will set in, and that it will then go on more rapidly and well than if the patient had not been bled. I cannot at all imagine on what evidence this last opinion is based; certainly it utterly conflicts with the facts of my own experience; and though I have personally seen little of the actual treatment of pleurisy by bleeding, I have examined a pretty large number of persons whose past history included one or more pleuritic attacks which had been so treated. The accounts given by such persons show a melancholy uniformity; long weeks and months of suffering from the presence of effusion in the chest, occasionally leading (through empyema) directly into active and rapidly fatal tuberculosis, nearly always slow and imperfect recovery, with diminished vital energy and especial weakness of the chest, and only in the rarest cases a tolerably prompt and complete recovery. The homœopathists have made their fortunes in no small degree by their 'treatment' of pleurisy, which has had the one sole merit of being purely negative, and avoiding all destructive agencies.

"A much better case, no doubt, might be made out on behalf of local blood-letting. Cupping ought never to be mentioned, being actually barbarous in the suffering it inflicts on a pleuritic patient. But leeches unquestionably do relieve pain very often in a speedy and effectual manner, and I only know of one objection to their use—viz., that morphia will relieve the pain with even greater certainty. During five years of dispensary practice I determinedly abstained from the use of leeches in pleurisy, and found morphia, even given by the mouth, a perfectly satisfactory substitute. But since the use of the hypodermic syringe has become more common, the advantages of morphia are far more manifest; and I have no doubt, personally, that leeches are now unnecessary. The first act of the physician in treating a pleuritic patient in the agony of the early acute stage should be to inject $\frac{1}{6}$ or $\frac{1}{4}$ grain of acetate of morphia (for an adult) under the skin, and to envelope the painful side in a hot poultice. For a child under two years, $\frac{1}{40}$ or $\frac{1}{30}$ grain is enough. Such doses as these may be repeated every four hours, if necessary; but in fact it is seldom that more than two or three doses are needed in the first twenty-four hours, and afterwards one dose in each twenty-four hours is generally enough.

"I would insist strongly on the advantages, indirect as well as direct, of subcutaneous over gastric administration of opiates; in a direct way, the former is superior, as acting much more rapidly; in an indirect way, because it so much less disturbs the functions of the alimentary canal.

"Of the treatment by mercury, I can express only the most unqualified disapproval. I have watched many cases of pleurisy in which, according to the rule formerly acknowledged, mercury was given, either to complete or partial salivation, as soon as the signs of effusion became unequivocal, and I can truly say that these cases, even when they were not further complicated by the depressing influence of blood-letting, contrasted very unfavourably with the results of a treatment which entirely abjures mercury for any purpose except that of an occasional purgative. I am glad to cite, on this point, the late Dr. Hillier, who says (in his Monograph on Children's Diseases) that from experience he had been led to abandon mercurial treatment for pleurisy; and I believe that, whatever some of the class-books may still say, mercury is practically

given up by the best physicians in this country, not only in children's pleurisy, but in that of adults. It seems the general opinion among those with whom I have conversed, that the absorptive action with which mercury used to be universally credited is more than doubtful in the case of pleuritic effusions, whether fibrinous or serous. And certainly, if it fails to do good, mercury may do very sensible harm. I have seen cases in which it apparently produced the most decided anæmia—at least there was scarcely any other possible cause for the latter condition—which set in rapidly after the first occurrence of ptyalism.

"The treatment by so-called 'counter-irritants,' as pursued by many physicians, is no less repugnant to me than is that by mercury or bleeding. Let me make two admissions. In the first place, the mere application of a mild mustard plaster, or, still better, of a hot poultice, or epithem, undoubtedly may give some ease; perhaps even arrest incipient inflammation; and the use of small flying blisters, in the limited attacks of pleurisy which are so common in phthisis, undoubtedly appears to give relief in many cases. But the use of large blisters, especially if kept open, appears to me both useless and often prejudicial. I shall not repeat here what I have said at length elsewhere; suffice it to say that I adhere to my opinion already stated, which is the same as that previously announced by many of the greatest masters of practical medicine in the present century.

"The practice of painting the chest-wall with iodine, though not open to the same positive objections as apply to blistering, has never, in my experience, yielded any very positive results. It is, I believe, very inferior in utility to the application of the simple adhesive or the Burgundy pitch plaster, to afford mechanical support; this really does sometimes appear to favour absorption of the fluid, and it usually gives much comfort.

"The employment of diuretics to promote absorption is another point on which I find myself at issue with the opinions of many. The only drug which has appeared to me, in some cases, directly to promote absorption by means of increased diuresis, is iodide of potassium, in quantities amounting from 6 to 18 grains daily, according to the age of the patient. I think it is worth trial for two or three days (along with the external use of iodine) when effusion comes to a standstill.

"The medicine, however, which stands quite alone in its power to promote the process of absorption is *iron*—best given in the form of the *muriated tincture;* and in all cases where there is marked anæmia it should be exclusively employed from the moment when the necessity for administering opium ceases."

After adverting to some matters of minor importance, Dr. Anstie alludes to the change of opinion which the writings of Trousseau, Bowditch, and others have produced during the past few years. With regard to paracentesis thoracis Dr. Anstie says:—

"It can hardly be doubted that the whole feeling about the dangerousness of paracentesis rested upon the use of clumsy and imperfect means of operation, and on exaggerated ideas of the evil effects of admitting a small quantity of air into the pleural sac. With regard to the first point, we are entitled to say that it is quite possible so to operate as

to insure that no damage will be done to viscera, and that no more than a trifling quantity of air will be admitted to the pleura. And upon the second point we may certainly now assure ourselves that there is no reason to fear serious mischief from the admission of a limited quantity of air if the opening made in the operation be afterwards properly closed. It is even unnecessary, as Dr. Bowditch's large experience has shown, to make the opening valvular. But the most important advance that has been made is the invention of apparatus which allows of the operation being made either simply exploratory, or carried on at once to evacuation of the fluid. With the instrument either of Bowditch or Dieulafoy we introduce a very small trocar and canula guarded with a tap, and by attaching a suction-syringe and opening the tap, we withdraw a small amount of fluid, the exact nature of which we can identify: if we elect to continue the evacuation, we can do so with the aid of the syringe; if, on the other hand, no fluid can be obtained, the guard-tap has prevented the entrance of air, and we can withdraw the canula and close the wound without having done the least mischief. By the use of the small canula we are able to operate without risk, because, in the case of an entirely mistaken diagnosis, we should have done no damage, even though we had perforated a consolidated lung, a solid tumour, or an intercostal artery. The suction power of the vacuum-syringe will enable even thick fluid, such as somewhat concentrated pus, to be withdrawn through the smaller-sized canulæ; but the puncture is such a trifle that, in case of our desiderating a larger tube, the smaller one can be withdrawn, the finger being pressed on the spot as it emerges, and the more capacious canula introduced at the same place.

"The site of puncture should be selected in ordinary cases according to Bowditch's rules:—Find the inferior limit of the sound lung behind, and tap two inches higher than this on the pleuritic side, at a point in a line let fall perpendicularly from the angle of the scapula. Push in the intercostal space here with the point of the finger, and plunge the trocar quickly in at the depressed part; be sure to puncture rapidly and to a sufficient depth, or you may be balked by the false membranes occluding the canula.

"It will sometimes happen that with the greatest care and trouble we are unable to get a flow of fluid at the point where we first puncture; it is then our duty to try elsewhere, for our failure may be owing to unusual thickness of the false membranes in the lowest inch or two of the pleural cavity. We thereupon repeat the puncture a little higher up, and further towards the axillary line, and here we perhaps find fluid: at any rate, no harm has been done by the two punctures.

"The circumstances under which paracentesis ought to be performed for pleurisy are the following:—

"1. In all cases of pleurisy, at whatever date, where the fluid is so copious as to fill one pleura, and begins to compress the lung of the other side; for in all such cases there is the possibility of sudden and fatal orthopnœa.

"2. In all cases of double pleurisy when the total fluid may be said to occupy a space equal to half the united dimensions of the two pleural cavities.

"3. In all cases where, the effusion being large, there have been one or more *fits* of orthopnœa.

"4. In all cases where the contained fluid can be suspected to be pus, an exploratory puncture must be made; if purulent, the fluid must be let out.

"5. In all cases where a pleuritic effusion, occupying as much as half of one pleural cavity, has existed so long as one month, and shows no sign of progressive absorption.

"The *limits* of the operation form an important question. Formerly one great error seems to have been, that operators were often too anxious to extract the whole of the fluid; in this way they often protracted the operation to a mischievous extent, and gave abundant opportunity for that very entrance of air to the pleura which was theoretically so much to be dreaded. Among the latest writers, Bowditch and Murchison have most authoritatively shown that it is neither necessary nor useful to extract the whole of the fluid, and that the removal of just so much as may be necessary to relieve substantially the mechanical distress, will in most cases give the necessary spur to the natural process of absorption by means of which the rest of the fluid will be taken up. One rule seems absolute; the withdrawal of fluid must be arrested the moment that the patient begins to complain of constricting pain in the chest or epigastrium. Even in the case of purulent effusion there can be little doubt that absorption often takes place, though unquestionably there is here a danger that concrete cheesy matter may be left unabsorbed, and under unfavourable circumstances may become the starting point of tubercular infection.

. . . . . .

"It remains to say a few words on the treatment of those least fortunate cases where, from one cause or another, a purulent fluid forms and re-forms with great rapidity after each tapping, and perhaps becomes putrid and stinking. Where it is only a question of excessive purulent secretion, simple washing out of the pleura with warm water after tapping may possibly change the action of the membrane, but in most cases it will be necessary to keep the canula in, cork it up, and daily allow the exit of pus, and then wash out the cavity. But in my opinion, if it comes to this, the better plan by far is the drainage tube. A needle-eyed probe, being introduced through the original opening, is carried through to the opposite chest-walls, and is there made to protrude the muscle and skin of an intercostal space, the finger outside carefully feeling for it. The probe is cut down upon, forced out through the chest-wall, and threaded with a strong thread; this is then drawn back through the chest till it comes out at the original opening. The thread is fastened to an india-rubber drainage tube (pierced with openings in the manner devised by Chassaignac), and the latter is then drawn through the chest till it issues through both orifices. Nothing more then remains but to tie the ends of the tube lightly together."

Art. 47.—*Treatment of Pneumonia.*

By Sir Thomas Watson, Bart., M.D., F.R.S.

(*Principles and Practice of Physic*, 5th edit., 2 vols., 8vo, pp. 910 and 1070. London. 1871.)

In the treatment of pneumonia Sir Thomas writes :—

"Years have passed by since I have met with any instance of that disease which has required phlebotomy. In this special case, not only must you decline to be guided by the mere name of the disorder, you must not be guided even by the *thing*, *pneumonia itself*, as disclosed by the evidence of auscultation. The general or constitutional symptoms must direct the treatment, while the local signs identify the disease. The question must always be, what detail of treatment will soonest bring this particular case to its best possible issue ?

"When, with the physical evidence of pulmonary inflammation, you find your patient breathing with extreme labour and difficulty, and you notice at the same time the tokens of enormous venous congestion, the veins of the head and neck turgid with dark blood, while the pulse is very feeble as well as frequent, you may conclude that the right side of his heart is so distended with blood as to be unable to contract, and you must take blood by venæsection, with the chance of so saving your patient's life, and with the certainty of prolonging it, and of giving immediate relief to his exceeding anguish. But I do not advise you to push the bleeding beyond the advent of this manifest relief. I believe this to be the only accident of pneumonia that requires or warrants a recourse to general blood-letting.

"Again, if at the outset of the illness there is sharp pain in the side, announcing the presence of *pleuro*-pneumonia, you will do well, especially if the patient's health have been previously sound, to apply cupping-glasses or leeches over the painful spot : and you need have no dread, in my opinion, of ultimately damaging him by this local diversion and removal of blood.

"Diaphoretic medicines are, in all cases, proper and serviceable : and in the severer forms of pneumonia I would recommend you to adopt the treatment by *antimony*, as directed by the Italian physician Rasori ; but I would limit and regulate that treatment, in accordance with the rules laid down by Dr. William Gairdner in his instructive volume on *Clinical Medicine*. They are simply these : to give the antimonium tartaratum in doses varying from one twentieth of a grain to one grain every hour, withdrawing or suspending the remedy as soon as it produces any distressing effect on the patient—continued vomiting, purging, or great general depression : withdrawing it also as soon as the fever appears to have received a decided check. I said *continued* vomiting, because a single act of vomiting may be beneficial. After that the stomach is generally found to *tolerate* the drug, as our Continental brethren express it.

"I should add that this antimonial treatment is chiefly useful and fit

for the very early stage of the disease, when the skin is hot and dry, and the expectoration scanty and viscid.

"It will be right in the commencement of the disease to administer for once a mercurial purgative—two or three grains of calomel, for instance, with ten or twelve of rhubarb. But multiplied experience has at length wrought a widespread belief that to give mercury in this disorder, with the view of exciting ptyalism, is not commendable practice.

"Among what may be called the routine remedies of pneumonia we must rank counter-irritation by means of blisters; but they are often applied to the chest much too early in such cases. In the outset, while there is yet considerable fever present, they add to the irritation and distress the patient, and tend to aggravate the existing inflammation. But when the fever is no longer high and the skin no longer burning, though the expectoration is still difficult, the dyspnœa considerable, and a sensation of pain, or tightness, or oppression is experienced in the chest, then a large blister is often productive of very sensible benefit; but it *should be* a large one. The patient should have a waistcoat almost, or at any rate a breast-plate, of blistering-plaster. I have never seen such good effects from placing blisters upon distant parts in this disease, upon the thighs or arms for instance, as would lead me to plague the patient with them in those situations.

"What I have said of blisters applies to the other methods of stimulating the surface. Take a case in illustration. A worthy physician, a friend of mine, suffering in his own person an attack of pleuro-pneumonia, was persuaded, against his better judgment, to lay a mustard poultice to his painful side. The pain, as soon as the mustard began to tell, was increased to a pitch that was scarcely endurable. He had the mustard removed, and the part (after it had been washed) covered with leeches; with the speedy effect of bringing ease to his suffering, as decided as had been its previous aggravation. The proper appliance under such circumstances is a soft and warm *linseed*-poultice."

Art. 48.—*Brandy in Pleuro-Pneumonia.*

By J. M. Winn, M.D.

(*Medical Times and Gazette*, September 7.)

Dr. Winn thinks in spite of all that has been said against the use of alcohol in disease, that the following case affords a striking instance of its utility in some forms of pleuro-pneumonia:—

"On the 21st instant I was requested to see, in consultation, Miss ——, aged twenty-one, a dressmaker. She is a delicate girl, but fairly nourished. She was suddenly seized, after exposure to cold, about a fortnight before I saw her, with pleuro-pneumonia of the right lung. A few days after the attack she spat up prune-coloured expectoration. I found her in an extremely prostrate condition—breathing laboured, pulse exceedingly small and rapid, skin burning hot; complete dulness of the lower lobe of the right lung, with absence of respiratory murmur; tongue clean;

bowels, which had been much relaxed, were then quiet. She was taking eight ounces of port wine daily. We ordered a small blister to the side, a dessert-spoonful of brandy every four hours, in addition to the wine, and beef-tea or milk every two hours. On the following day the improvement was very striking—pulse full, skin moist, and breathing less frequent. When I last saw her there was every prospect of her recovery; her appetite was excellent, breathing tranquil, expectoration copious and mucous. There was still some dulness of the right lung, and a slight *frottement* over the same spot.

"It is a singular fact that her father died of pleuro-pneumonia, and that her brother had a similar attack at twenty-one, her present age."

Dr. Winn thinks that the strongest opponent to the use of alcohol must admit its virtue in the above case.

Art. 49.—*Consumption and Contagion.*

By Richard Payne Cotton, M.D., F.R.C.P., Senior Physician to the Hospital for Consumption &c., Brompton.

(*British Medical Journal*, August 31.)

There is no question in connexion with phthisis of more practical interest and importance than that of contagion; and there is none other, perhaps, about which there exists so great a diversity of opinion. Practical evidence is of far more value than anything speculative; and as a great experiment upon the zymotic character of phthisis has long been going on at the Consumption Hospital, Dr. Cotton briefly gives the results.

"The Consumption Hospital was opened in the year 1846, with ninety beds. Ten years later it was completed; and since that time two hundred beds have been constantly occupied. We have lost, during this long period, only one nurse from phthisis; and this was a poor creature whose husband had deserted her, and who had long endured, from other causes also, considerable mental anxiety and physical exhaustion. On the other hand, the services of the nurses generally have been unusually prolonged; and I can myself testify to their general health being, as a rule, remarkably good. Of those *now resident*, two have been at duty in the hospital seventeen years; one has resided thirteen years; one, eleven years; two, ten years; two, nine years; one, seven years; one, four years; two, three years; and four, two years. The two oldest nurses have lately died of old age and general decay, after having long been superannuated; each of these had resided in the hospital for upwards of twenty years.

"Of the gallery maids, whose duty it is to be much within the wards in sweeping and scrubbing the floors, only one has been known to have been affected with phthisis; whilst it is obvious that, during so long a period, the numbers of persons thus employed must have been considerable.

"Our engineer has seen eighteen years' duty within the hospital, and he is now in good health.

"We have had, at different times, three attendants in the *post mortem* room. The first of these is still living, but in infirm health, the result of intemperance; the second left with spinal disease; the third has been in his office for nearly four years and is in good health.

"Of the dispensers, one who kept to his post for above ten years is living and well; three who have held office in the dispensary since the year 1867 are also well; and the present senior dispenser has been with us for ten years. Many others have been in this department since the opening of the hospital, but only one has been known to have been consumptive.

"The resident clinical assistants of whom we are able to obtain reliable information amount to seventy-eight in number. Three of these are said to be phthisical; but only one has been known to have died of phthisis. This gentleman I knew intimately; he was always of consumptive appearance, and one of his sisters had died of phthisis.

"Our resident medical officer, Mr. Edwards, to whom I am indebted for the statistics I am now giving, has held office for more than twenty-one years; and all those who know him can testify both to his continued health and his undiminished energy and usefulness. The present matron has also been in her office for more than twenty-one years, during which long period her health has been excellent.

"The present secretary has been at his post for fifteen years; and his only predecessor, who is still alive and well, had held the same office for sixteen years. The assistant-secretary has been at his duties within the hospital for eighteen years; and a clerk—whose office it is to register the out-patients, and who must, on that account, be exposed to an unusually great extent to phthisical contagion, did such exist—has been at his work for five years. I am happy to add that all of the above are now in excellent health.

"The present chaplain has been with us for twenty-two years; and his two predecessors are still living. Happily all of them are well.

"Of the staff of physicians and assistant-physicians—nineteen in number—one only has been affected with phthisis, and he was a young man of delicate and decidedly consumptive aspect. The period of office which some of us have had is unusually long. Of the present physicians, two have been upon the staff twenty-four years each; one for seventeen years; one for thirteen years; one for nine years; and one for five years. The late senior physician, who resigned only three years ago, had been attached to the hospital, and in constant work there, from its very foundation. Two of the former physicians who resigned their appointments, andsubsequently died of disease quite distinct from phthisis, had held office in the hospital for fifteen and nineteen years respectively.

"With the above facts before us, must it not appear to all believers in the doctrine of phthisis originating in a special and contagious poison, that a residence in the Consumption Hospital and long-continued working in its wards is a very good way indeed *not to catch the disease?*"

Art. 50.—*Caseous Infiltration, or Pneumonic Phthisis.*

By Walter Hayle Walshe, M.D.

(*Treatise on the Diseases of the Lungs: including the Principles of Physical Diagnosis and Notes on Climate.* Fourth edition, revised and much enlarged, pp. 656. London, 1871.)

The subject of caseous infiltration, which was not mentioned in former editions, and that of syphilitic disease of the lung, which was very briefly discussed, are thus described in the present one:—

"CASEOUS INFILTRATION, OR 'PNEUMONIC PHTHISIS.'

"Caseous infiltration or caseous pneumonia represents the various forms of 'tuberculous infiltration' of Laennec, gelatiniform, grey and yellow. Such infiltration may occur as an irritative result of the development of the miliary granulation ('Tuberculo-pneumoniac phthisis' of Addison) and so assume the guise of a further evolution of this; or it may have an independent existence; or, as long ago pointed out by Louis, it may entail the formation of miliary tubercle within its own area.

"Under all three conditions the course of the disease may be acute or chronic; if of acute course, the early likeness is to asthenic pneumonia, the eventual to rapidly destructive phthisis; if of chronic course, to ordinary chronic miliary phthisis.

"ACUTE CASEOUS INFILTRATION.

"*Symptoms.*—The local symptoms are those of pneumonia of asthenic type; there is no single distinctive unit among them. The assertion that prune-juice sputa are specially frequent is, if I may trust my experience, a grave error. But the pyrexia is less marked, the temperature less raised, and the respiration less frequent than in sthenic consolidation.

"Systemic sympathy (except that signified by general adynamia) is, curiously enough, sometimes less obvious than in active inflammatory disease of the lung. There may be very little delirium. The bowels may be extremely constipated, though, as shown after death, the intestines are ulcerated. Deficiency of urinary chlorides habitually occurs.

"By-and-by, say from the fourteenth to the twentieth day, breakage of the infiltrated tissue sets in; the symptoms then become identical with those of acute tuberculization.

"*Physical Signs.*—Whatever these signs be, their original site is basic, or central, as a rule; eventually they travel upwards.

"Inspection discloses nothing special; the measured semicircular width of the affected side, especially if infiltration have occurred on an extensive scale, may be slightly increased; application of the hand may detect some increase in vocal vibration, and some deficiency of chest motion; but it is impossible to say in what part of the chest this deficiency may be most marked.

"The resonance under percussion is more or less impaired—at first

in some limited points, subsequently over the surface pretty generally. Dulness may become extreme at the base; though to the last hour various spots may give resonance not positively abnormal. The quality may be markedly tubular in some places, independently of excavation: with cavity, even on a small scale, amphoric.

"The respiration, weak in some points, exaggerated in others, assumes bronchial or even faintly tubular quality over the most densely consolidated parts; but the highly marked, sniffling, metallic breathing of hepatized consolidation may be wanting, even where the entire lung is very closely infiltrated with softening tubercle—doubtless because the air is never so completely expressed from the vesicles in the latter as in the former case. I have known the breathing, at first distant, high-pitched as if hissed between the teeth, subsequently fall in pitch considerably. Bronchial rhonchi, dry and moist, of various sizes and abundance are heard; if the condensation be very dense, the bubbling rhonchi may acquire a ringing character. If excavations form, thin metallic echoing hollow rhonchus may be caught. The characters of the vocal resonance depend on the closeness and extent of consolidation; null, weak or bronchophonic, but not snifflingly so, as in hepatization, it may be whisperingly pectoriloquous over the site of a small deep-seated excavation with intervening condensed and infiltrated texture.

"*Diagnosis.*—It is easy enough to distinguish this form of disease from *acute bronchitis:* the consolidation-signs alone suffice.

"I have known such deadness of percussion sound and such deficiency of respiration and vocal resonance at the base that, were it not for the maintenance of vocal vibration and the graver constitutional aspect of the case, *pleuritic effusion* might be supposed to explain all.

"I know of no means by which acute consolidating infiltration, destined to liquify and disintegrate the lung, may be distinguished with surety at the outset from *ordinary sthenic pneumonia.* We may suspect, nay, even divine, on the basis of constitutional pravity; but we cannot prove: events must be waited for. The more true is this, that seemingly sthenic inflammation may exist at first, furnish its own signs in more or less perfection, its rusty sputa and perverted pulse-respiration ratio, and give place to acute caseation.

"*Acute primary cancerous infiltration* of the lung may destroy life in less than four months, and simulate acute caseous solidification; but that disease consolidates the lung less obviously, is attended with signs of tumour about the main bronchus (of the pressure-class and others), often with peculiar hæmoptysis, severe local pain, and diminished width of the side, while, *per contra,* its pyrexia is greatly less marked than that of caseation.

"*Treatment.*—The treatment is obviously that of asthenic pneumonia. Whether in any instance such management has ever prevented otherwise imminent disintegration of tissue is of course unproven.

"CHRONIC CASEOUS INFILTRATION.

"Except in the fact that deposit and breakage take place more particularly at the base and middle height of the lung, there is nothing to distinguish this class of case from ordinary chronic phthisis. In

local and general symptoms, as in physical signs, the pair are, in the present state of knowledge, clinically undistinguishable.

"SYPHILITIC DEPOSIT, OR SYPHILOMA.

"The lungs hold a well-defined place in the class of visceral sufferers from constitutional syphilis.

"Fibro-plastic material, identical in naked eye and in microscopical characters, as also in mode of development, with the gummata and exudative infiltrations of tertiary syphilis in the subcutaneous and submucous tissues, the tongue, the liver, and the heart, appears in the lung in the nodular and infiltrated forms. In either form the disease may be the sole morbid condition in the lung.

"Amyloid and lardaceous degenerations of various viscera are often associated with syphiloma.

"NODULAR DEPOSIT.

"These nodules, rounded in shape, yellowish-white in colour, varying in size from a pea to a walnut, originally opaque, dry, hard, almost creaking under the scalpel, eventually soften down and undergo disintegration with elimination, and leave behind them excavations in the lung-tissue. They may form in any part of either organ, but affect a preference for the basis and periphery. In mode of formation they are rather lumpy infiltrations than true superadded tumours; the textural elements being found within their area. In the softened material there is much similarity to tubercle, but the microscope exhibits only broken up fibro-plastic cells and granular fat.

"*Clinical history.*—Several recorded cases show that, when small and unsoftened, these syphilomata, even though they be numerous, give rise to no symptoms; a fact in perfect accordance with what is known of cancerous nodules also. Even when they have attained a certain size, their discovery has been commonly reserved for *post-mortem* examination.

"As to physical signs, there can be none if the nodules be small, though their number be large: excess of pulmonary resonance would certainly not form a justifiable ground of their diagnosis.

"If softening and elimination occur, excavation-signs must follow. But these will be less clearly defined than in tuberculous, caseous, or cancerous breakage, in consequence of the deficiency of notable hardening of issue round the excavated spots. I have not seen any case (nor do I know of any published story of the kind) in which I had clinically followed the excavating process, and found after death nothing but broken-up syphilomata in the lungs.

"INFILTRATED SYPHILITIC DEPOSIT.

"There is reason to believe that the diffused form of the disease is notably more common than the circumscribed.

"*Anatomical characters.*—As in non-diathetic cirrhosis, fibro-plastic substance or induration-matter infiltrates to a variable extent the intercell-spaces and the interlobular-spaces, and replaces the actual pulmonary parenchyma. There seems to be nothing distinctive in the characters of the syphilitic variety of the product; and the connexion, between the low quasi-inflammatory process producing it and syphilis, is only to be

established by the antecedents of the individual and the co-existence of various positive results of tertiary syphilis. But this is equally true of the indisputable syphilitic formations lingual, sub-mucous, and sub-cutaneous. The infiltrated form, as well remarked by Dr. Wilks in his very thoughtful Essay, is the least characteristic of the two; but there can be no doubt it is greatly the more important clinically.

"*Clinical history.*—Syphilitic infiltration of the lung may, I think, be expected clinically to follow either of two widely different courses; it may undergo absorption, or it may soften and break up.

"The issue in cases of absorption seems exemplified by the following brief narrative: A gentleman, aged about twenty-seven, had chancre and suppurating bubo—subsequently ulcerated throat and squamous syphilide. Some months later a troublesome cough brought him under my notice; he had had no hæmoptysis; the expectoration, muco-purulent, was destitute of special character; there was no pyrexia; little, if any positive wasting; the aspect generally was not suggestive of tuberculous or other disintegrating lung-disease.

"The left side of the chest had all the physical attributes of health. On the right side high-pitched toneless dulness, not the least wooden in quality, suggestive of soft consolidation, reached from a shade below the clavicle to about the fourth rib, almost joining on with the liver-dulness—it was not perceptible above the clavicle nor in the axilla, and was much less marked behind than in front. The respiration, high-pitched but weak, reached the ear unattended with dry or moist rhonchus.

"Evidently this consolidation was not tuberculous, nor caseous; its combined unilaterality and extended area stood as a fatal objection to either notion. Cancerous infiltration looked much more probable: for the solidity was at the usual side and occupied the usual site at that side, and the absence of pressure-signs was not incompatible with the existence of that form of the affection. The diagnosis was left undetermined.

"The patient went South; improved in general health; shortly after had epileptiform seizures; came home with palpable extra-cranial, and inferrible intra-cranial nodes and his lung unchanged. He was put on a course of bichloride of mercury, under which, among other changes, the lung so completely recovered, that after a while not a particle of difference could be detected in the percussion-note on the two sides. Years afterwards I saw this patient in perfect health.

"The evidence seems very strong here that softish syphilitic exudation had undergone absorption. True, neither in non-diathetic nor in syphilitic fibroid infiltration has the product been actually *seen* in the lung in the soft state; but Guebler has found the exudation-material soft, even quasi-liquid, in the liver of infants cut off by syphilis.

"But here is a graver condition of things. Secondary syphilis, cutaneous, pharyngo-laryngeal and anal, has existed in an individual who is gravely emaciated and enfeebled, who has pyrexia and night-sweats, with cough and more or less expectoration—though not, as far as I chance to have seen, hæmoptysis. Here the physical signs may prove, in a tempered form, those of non-diathetic cirrhosis, limited in the main to one side, especially the class of signs appertaining to bronchitis. When first seen, I do not know any means by which a case of this type could be with surety distinguished from some form of tuber-

culous or caseous destruction, or from an unadvanced condition of ordinary cirrhosis. But by-and-by, when rapid extinction seems imminent, wasting and prostration being alike carried to extremes, a rally, inexplicable almost on the hypothesis of any one of those three affections, takes place; the patient goes on for a while well, and the diagnosis becomes clearer. Sooner or later he again breaks down—life seems again in jeopardy, and again is saved.

"Now I entertain no doubt that cases of this class have been set down by the older observers as examples of ordinary tuberculous phthisis running exceptionally a remittent or quasi-intermittent course. They are chiefly observed among the dissolute of both sexes; and I suspect they may in some measure supply the real foundation of the opinion that phthisis runs a slower course in habitual drinkers than in sober persons. But only in some measure: for I have observed this slow course in drinkers who were very positively non-syphilitic. Probably too, the cases of phthisis 'cured with mercury' by our forefathers were really examples of syphilomatous breakage.

"Eventually death takes place without miliary tuberculization or caseation having occurred; other tertiary syphilitic phenomena ofttimes hastening the fatal issue.

"*Diagnosis.*—The want of proportion between the general symptoms and the local chest-mischief; the unilaterality of the attendant bronchitis; the slight amount or absence of night perspirations, and the syphilitic history or the actual presence of tertiary changes, are the main guiding elements of diagnosis. But these may be quite insufficient to justify a formal opinion until time, sufficiently long to display the peculiar course of the disease, has worn away.

"*Prognosis.*—The prognosis, though grave, is very greatly less so than in tuberculous disintegration.

"*Treatment.*—Slight mercurialization, and best by the iodide of mercury, is singularly beneficial in some of these cases: probably the more so the more positive the evidence of syphilomatous tumour of well-marked dimensions. Iodide of potassium, if there be real objections to the use of mercury, forms the most reliable medicine.

"Various mercurial and iodurettted remedies may be used with great advantage as inhalations, either with Sturt's instrument or Seigle's spray-inhaler.

"A course of the waters of Aix-la-Chapelle proves singularly beneficial to some of these sufferers.

"The fitting remedies for all wasting diseases must, of course, be employed as subsidiary aids."

Art. 51.—*The Action of Sulphate of Quinine upon the Temperature in Pulmonary Phthisis.*

Under the care of Dr. Ogle, at St. George's Hospital.

(*The Lancet*, July 6.)

The following observations regarding the action of quinine upon the temperature of the body in pulmonary phthisis were recently made by

Dr. Ogle. The patient, a young woman, was admitted into the hospital with symptoms of dyspepsia, attended by pain across the back, great debility, and mental despondency. At this time no febrile condition existed. Subsequently, whilst taking quinine and sulphuric acid, pains about the thorax came on, and also undoubted general and stethoscopic signs of deposit of tubercle. At this time the daily registering of the temperature of the body was undertaken. From April 27th to May 20th the temperature was 100° night and morning, except on three occasions, when it went up to 101°—once in the morning and twice in the evening, at intervals of three or four days.

During the above days—that is, from April 27th to May 20th—the patient was treated as follows—viz., by two-grain doses of quinine and a few drops of sulphuric acid in water every four hours, and by occasional turpentine stupes to the chest, until May 1st; she then took effervescing citrate of ammonia and carbonate of ammonia until the 6th of May; after which she returned to the quinine and acid, and took two drachms of cod-liver oil after dinner. This was continued (a blister having been applied beneath the left clavicle on the 18th) until the evening of the 20th, when she began to take ten-grain doses of quinine in a little dilute sulphuric acid and water three times a day. The temperature was then recorded as follows:—

	A.M.	P.M.		A.M.	P.M.
May 21st	100°	100°	May 23rd	99°	99°
22nd	99	99	24th	99	99

On the 24th the quinine was increased to fifteen-grain doses until the 27th, the temperature during this time being registered as follows:—

	A.M.	P.M.		A.M.	P.M.
May 25th	98°	99°	May 26th	99°	99°

At this time the quinine produced such discomfort and pains in the head, with buzzing in the ears and dimness of sight, that the dose was again diminished to ten grains, and continued till May 31st; and during this time the following temperatures were recorded:—

	A.M.	P.M.		A.M.	P.M.
May 27th,	100·4°	100·3°	May 30th	100°	100°
28th,	100·3	100·2	31st	100	—
29th,	100	100·2			

At this period, as the uncomfortable feelings about the head had not subsided, Dr. Ogle omitted the quinine for some days altogether; the temperature during this time remaining at 100°. On June 3rd, as all discomfort had abated, Dr. Ogle at once put the patient on twenty-grain doses of quinine night and morning, which doses were continued until June 10th; and the following temperatures were during that period recorded:—

	A.M.	P.M.		A.M.	P.M.
June 4th	—	99°	June 8th	100·2°	100°
5th	99°	99	9th	99	99
6th	99	99	10th	100	—
7th	100	99·2			

On the 10th the quinine was discontinued, and the patient a few days after, at her own desire, left the hospital, and thus observation of her case was broken off.

With regard to diet, the patient, during the thermometrical observation, was taking meat and potatoes, or fish with eggs and (at her own request) without butter, until June 3rd, when she had fish and beef-tea, occasionally eggs, but no meat. For the most part, three ounces of port wine were given daily.

On consideration of the tables the following points are noticeable :—

1. The high temperature and its uniform range in a case of active phthisis, the temperature during observation prior to the exhibition of the large doses of quinine being never lower than 100° F. and occasionally 101°.

2. The promptitude with which (see date May 22nd), on the exhibition of the ten-grain doses of quinine, the temperature sank to 99°, this range being maintained night and morning.

3. The same degree of temperature only being attained when the quinine was increased from ten to fifteen-grain doses, except on one occasion (the morning of May 25th), when it fell to 98°.

4. The return of the high range of temperature on the disuse of the quinine, and even of a higher degree, as on three occasions it reached respectively 100·2°, 100·3°, and 100·4°.

5. The subsequent reduction of temperature to 99° on the quinine being given in twenty-grain doses night and morning, with only one or two exceptions, when it attained 100° and a little more.

During these fluctuations no proportionate modifications of respiration, of the pulse, or of the heart's beat, were found to exist.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 52.—*On Extra-Cardiac Souffles.*

By Dr. R. LÉPINE.

(*Gazette Médicale de Paris*, No. 26, 1872.)

"Under certain conditions which are not of very rare occurrence, and to which I shall afterwards return, the heart may, in consequence of its variations in size during systole and diastole, expel more or less brusquely the air contained in the adjacent pulmonary alveoli, or may draw it in by causing a tendency to the formation of a vacuum. These *local* expirations and inspirations limited to portions of the lung in immediate contact with the central organ of the circulation, may be accompanied by tolerably loud bruits, naturally isochronous with the normal sounds of the heart, presenting sometimes, partially at least, the timbre of the respiratory murmur, but most frequently resembling intra-cardiac souffles, and in some cases so far as to completely simulate them. An augmentation of the energy of the cardiac movements, or again a morbid adhesion of the lungs, are the conditions which favour the manifestation of these extra-cardiac blowing sounds.

"Laennec was the first to describe these sounds, which he did briefly.

They were afterwards studied in England under the designations of *pulsatile respiration* (Thornburn), and *pulsatile pulmonic crepitation* (Richardson), and in Germany by Skoda, Wintrich, Gerhardt, and Niemeyer. In the second edition of his work on diseases of the heart, M. Friedreich has given a good and long description of them.

"In a case of thoracic deformity, M. Woillez found at the posterior part of the chest an intermittent bruit, "isochronous with the pulse and which was neither a blowing sound, a grating sound, nor simple arterial rustling, but a bruit of a manifestly vesicular character." He considered that it was caused by ruffling of the pulmonary tissue at each aortic dilatation.

"This particular observation, and the passage in Laennec's writings, comprised the whole of French literature concerning extra-cardiac souffles until the year 1862, when a thesis* was written by Dr. Choyan, whose attention had been directed by Dr. Potain to this interesting subject.

"If the whole difficulty consisted in determining the mechanism of the production of these bruits, they would interest physiologists more than physicians; but in spite of what has been said by certain authors, who have doubtless made but a very superficial study of the subject, it is very often a difficult matter to distinguish them from intra-cardiac bruits; they may, therefore, lead one to suppose the existence of an affection of the heart when such really is not the case, and this the more readily as the sounds are most frequently met with in patients in whom the heart contracts energetically and who suffer from palpitations. I remember a case in which a physician well skilled in the diagnosis of affections of the heart, was deceived by one of these blowing sounds, and admitted without reserve that there was an organic lesion. The autopsy showed that the heart was quite sound.

"If one consults the authors whom I have just named, it will be found none have given any characters by which these sounds may be distinguished from intra-cardiac blowing sounds. This, however, is not surprising, as most of these authors did not even suspect the difficulties of the subject. Here then we have a serious gap in the diagnosis of affections of the heart.

"This want has just been supplied by M. Potain, to whom we owe so much in connexion with the pathology of the circulating system. From an excellent lecture on extra-cardiac souffles, recently delivered by this physician at the Necker Hospital, we borrow the following description of the principal characters of these sounds:—

"The first character is this, that they are to be heard at a part where the presence of a layer of lung may be recognised by percussion. This is a necessity of their existence. If then a blowing sound be heard at a point where the heart is in immediate contact with the wall of the chest, this sound must be an intra-cardiac one.

"Exception being made of those cases which no doubt are extremely rare, where an extra-cardiac blowing sound may be heard at the posterior

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* *Des Bruits pleuraux et pulmonaires dus aux Mouvements du Cœur.*— Paris, 1869.

part of the thorax, they are the sounds generally met with in the precordial region towards the apex of the heart or above, more rarely at the base. At the apex they are produced more frequently during the systole than during the diastole; if they be seated a little above the apex they may sometimes be imperceptible until after the first cardiac sound, a character which enables one to reject the idea of a mitral bellows sound which never follows the stroke of the apex. In some cases, which seem to be rare, they precede the stroke. I will return subsequently to an interpretation of these peculiarities.

"At the base the sounds are often diastolic and with them here there sometimes occurs an isochronous depression of the thoracic wall, which has been designated as negative pulsation.

"Whilst intra-cardiac souffles are propagated, as is known, in determined directions, those with which I am dealing are heard over a very limited region.

"With regard to their timbre, I have already stated that sometimes they remind one of the slightly crepitant souffle of the respiratory murmur, and at other times quite resemble intra-cardiac souffles in presenting a peculiar harsh character. At some period or other these souffles very frequently undergo remarkable modifications. A slackening of the heart's action, or a change in the patient's position, may diminish their intensity, and in some cases, though very rarely, may cause them to cease. The sitting position and decubitus on the left side are generally unfavourable to their production.

"Intra-cardiac souffles are heard better while the inspiration is suspended; with the extra-cardiac souffles the contrary holds. The former are always to be more readily heard during expiration than during inspiration, the heart being then less covered by the lung, whilst for hearing certain extra-cardiac souffles, the period of inspiration, on the contrary, is the most favourable.

"With this abundance of differential signs one might probably think that there could be no possible doubt in the diagnosis. It would be desirable that this were so, but unfortunately there are in some cases extreme difficulties, so that one cannot attain certainty even by taking into account, as ought always to be done, the existence or absence of the functional signs of an organic affection of the heart. I have already stated that many patients suffering from palpitation are precisely under conditions favourable for the production of extra-cardiac souffles. In endocarditis what part in the production of the souffles is taken by the increased energy of the cardiac contractions? This is a grave question, which the practitioner ought to resolve in admitting by preference the *boursoufflement* of the valves as the special cause. An active treatment, though it were superfluous, is much better for the patient than abstaining, which might be injurious.

"I would that I were able to enter into details and attempt to show, as has been done by M. Potain, by an analysis of the mechanism of these souffles, the cause of their multiple and variable characters. Nothing is easier than the conception of the production of a systolic bruit at the apex; the air in the alveoli is brusquely expelled by the movement of the heart. The presystolic bruit is necessarily explained by the contraction of the auricle. With regard to the souffle perceptible only after the

ventricular systole, the interpretation is more difficult. It is most likely an inspiratory and not an *expiratory* sound, but it must be admitted that the inspiration produced by the systolic retreat of the heart is not at once sufficiently strong to produce a perceptible sound.

"Decubitus on the left side is less favourable to the production of the bruit, because the heart pressing upon the lung does not allow it to expand to the necessary degree. This condition of a certain degree of repletion of the alveoli explains why there are souffles which are only produced during inspiration."

Art. 53.—*Differential Diagnosis of Anæmic from Organic Murmurs of the Heart.*

By James H. Hutchinson, M.D.

(*Boston Medical and Surgical Journal; and Medical Press and Circular*, October 16.)

Dr. Hutchinson, in a lecture on anæmia, states that he has found a peculiarity in cardiac murmurs arising from anæmia, which is but obscurely alluded to by some writers on auscultation. The murmur will be found to be much more intense when the patient is in the recumbent position than when he is either standing or sitting. Having never failed to detect this greater intensity in the recumbent position in every instance in which he has auscultated anæmic patients, Dr. Hutchinson believes it is a characteristic of some importance in the differential diagnosis of anæmic from organic murmurs.

Art. 54.—*Nitrite of Amyl in Neuralgia of the Heart.*

By Leartus Connor, M.D., Professor of Physiology in Detroit Medical College.

(*Detroit Review of Medicine*, August, 1872.)

Dr. Connor extols this remedy in cases of this character, and mentions a case, accompanied by alternating attacks of asthma, in which prompt relief was afforded after the patient had inhaled from six to ten drops. In this history the subjoined points are of interest. Though no hereditary cause for angina could be traced, the life of the patient had been such as to most thoroughly exhaust the nervous system. There was no evidence of any heart disease or ossification of the arteries. The attack came on after a course of intermittent fever, unchecked for two weeks. As it was accompanied by alternating attacks of asthma, gastralgia, and intercostal neuralgia, this would point to the conclusion that these were all due to the same cause—some disease of the nerves supplying the heart, solar plexus, and the lungs. The advantages of this remedy over any other anti-spasmodic are its more rapid action, and its freedom from any unpleasant sequelæ. In his use of nitrite of amyl he has never been able to obtain any other therapeutical effects than those following the relaxing of spasm.

Art. 55.—*Tricœlian Human Heart.**

By S. M. Bradley, F.R.C.S.

(*British Medical Journal*, August 24th.)

The child, from whom the heart was taken, was born at the full period, of healthy parents. For the first thirty-six hours after birth the child appeared perfectly well, both circulation and respiration being efficiently carried on. At the expiration of this time it became cyanotic, was convulsed, and died at the end of forty-eight hours. The heart was situated naturally and was of normal size. There was but a single emergent artery issuing from the heart; it gave origin to both the pulmonary arteries, and to the usual aortic branches. This arterial trunk sprang from a single ventricle, into which both auricles poured their blood. The auricles were of unequal size, the right being larger than usual, the left extremely small: a freely patent foramen ovale permitted the passage of the blood from one to the other. The caval veins terminated as usual in the right, the pulmonary veins in the left auricle. The auriculo-ventricular valve approximated the mitral in character; the large single artery was furnished with well formed semi-lunar valves, behind which the sinuses of Valsalva were easily seen. The pulmonary arteries were large and close together. one, the left, being at a higher level than the other. The course which the blood would take in this case would be as follows. From the single ventricle blood would be poured into the arterial trunk; thence it would first of all pass into the pulmonary arteries, and partially traverse the lungs, the returning blood being poured by the pulmonary veins into the small left auricle. whence the greater part would flow through the foramen ovale into the right auricle, and thence into the single ventricle. The greater part of the blood, however, would never reach the lungs at all, but would be propelled along the continuing trunk (aorta) into the aortic branches; this systemic blood re-entering the heart in the usual way by the caval veins. The condition of heart which was found to exist in this child is the normal state in an embryo of eight weeks. At this time the aorta and pulmonary arteries are one; the auricular septum is imperfect, and the ventricular septum only commencing to be formed; a condition which is persistent in the batrachia. Five cases of a somewhat similar kind have been recorded.

Art. 56.—*On the Treatment (in extremis) of Acute Cases of Fibrinous Deposition in the Heart.*†

By Benjamin W. Richardson, M.D., F.R.S.

(*Medical Press and Circular*, Nov. 20.)

The author said that when he—twenty-two years ago—revived the subject of the nature, diagnosis, and treatment of fibrinous depositions

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* Read before the British Medical Association.

† Read at a Meeting of the Medical Society of London, Nov. 11.

in the heart during life, he met with two classes of objectors in the course of the debate. One esteemed Fellow, taxing his labours as visionary, had asked the severe question whether had the paper been before the Committee of Reference? Another equally esteemed Fellow had said that if the facts were as had been stated, they served but to raise up a hopeless knowledge for medical men. Therefore, *cui bono?* In a few years the first of these objectors passed away. By repeated experimental proof, he (Dr. Richardson) had made it a demonstration that fibrine does, in some cases, separate in the heart during life, while from clinical observation he had been able to point out the symptoms indicating the fact of such separation. The second objection had been met with infinitely more difficulty, and he had not, though so many years had passed, ventured to speak of it with hope of removing it. He had been called year after year to see and find cases (*in extremis*) where death was clearly the result of fibrinous separation, and he had discovered no opportunity of affording distinct service. At last this distressing state of doubt was passing away, and he might venture to speak of some method of approach towards success. He next referred to the exceeding mortality of the cases he had seen; they included cases of croup in children, of pneumonia, of peritonitis, of ovarian operation, of parturient cases before and after labour, and with and without phlegmasia, of erysipelas, of scarlet fever, and of some obscure cases in which nothing was proclaimed until the appearance of the fatal symptoms, except what was called cold or febricula, or remittent feverishness. After describing some in detail, he continued by stating that in his experience recoveries after fibrinous deposition had become actually developed were not more than three per cent. Of all classes of disease croup he believed yielded the largest number of examples; after that diphtheria, and after that the puerperal condition and peritonitis. He proceeded to place before the Society in a revised form the special points of diagnosis of fibrinous separation as occurring (*a*) on the right side and (*b*) on the left side of the heart. Then he noticed anew the condition favouring deposition. Under this head especially he named increased local heat of parts involving large veins, as of the extremest importance. For example, erysipelas involving the skin over the lower extremities was exceedingly dangerous. He was of opinion that the local increment of heat was in such cases sometimes the only just cause of danger. The increased temperature of blood in the veins produced the pectous condition in minute portions of fibrine, and the semi-solid little masses of fibrine formed were carried into the heart to become nuclei or centres for the larger separations. More speedily or sudden, general or systemic increment of heat, as in certain cases of apoplexy, led to separation in the larger vessels, and in the heart itself. The greater portion of the paper was devoted to the subject of treatment in cases of fibrinous deposit, and specially in cases *in extremis*. The author here first dwelt on what was bad treatment. He said so soon as the symptoms of deposition had become developed, all influences that had a depressing effect upon the heart ought to be instantly withdrawn; mental influences telling upon the emotions should be avoided. Sometimes the great distress exhibited by the sufferers—the distress of the dyspnœa particularly—tempted the practitioner to give opium. The practice was fatal, and could only

be defended on the doubtful ground that all treatment was useless, except to secure euthanasia. In cases of croup it was often a question whether tracheotomy ought to be performed to relieve dyspnœa, it being uncertain whence the dyspnœa proceeded, whether from obstructed respiration or obstructed circulation. In such instances the diagnosis was simple, and when it was clear that the dyspnœa was cardiac the operation was useless, and was better avoided; but in mixed cases or in cases of doubt, Dr. Richardson was inclined to give the patient the benefit of the operation. In purely defined instances of fibrinous separation the practitioner having determined what should not be done, has to settle the question—What shall be done? The first element of treatment, especially where the separation is on the right side, is to give absolute rest of the body in the recumbent position, for the heart working under embarrassment can bear no undue fatigue, and at the same time every active motion increases the danger of loosening the fibrinous mass, and of allowing it to float into the pulmonary artery. Rest secured, there should be given as much food as the stomach will bear, without distension from flatus, milk rendered slightly alkaline by lime water, and charged with a little Liebig's extract of meat, being on the whole the best food. The body, if it be cooling, should be kept warm by external dry applications. Sand bags are the best when they can be easily procured, and the temperature of the air should be sustained at 60° F., or even 70°, the air also being kept dry. As to internal remedies the author had first inclined to the free exhibition of alkaline solutions, especially ammonia; but in a case in which several years ago he carried out this treatment, using the bicarbonate of ammonia, and which terminated fatally after several days, although the concretion was found to have greatly softened and broken up, the blood was re-reduced to such an extreme solubility, the corpuscles so extensively destroyed, he had found the remedy was as serious as the malady. He had suggested the injection of ammonia by the veins in these cases, but had held back for the reason stated above from following out the idea. He had tried inhalation of ammonia, but without sufficient success to warrant enforcing the plan. Lately seeing the all but invariable fatality that followed the fact of depression, he returned again to the use of ammonia as a remedy, by administering it in large and repeated doses, in combination with iodide of potassium, using not as before a salt of ammonia, but the liquor ammoniæ of the Pharmacopœia. To an adult he had administered 10 minim doses of the liq. am. in iced water every hour, with from three to five grain doses of the potassium iodide every alternate hour. This treatment has been followed by a degree of success he had never anticipated. Nothing could be more remarkable than the fact of the quantity of ammonia that could thus be administered without danger, except the fact of the degree of fluidity of blood, and of blood corpuscles that could be recovered from. In proof of this he detailed two cases in which this treatment had been followed out with the effect of entirely relieving the heart when death seemed all but certain; one of these cases had ended in slow but entire recovery, and the other had now progressed favourably for nine weeks. The addition of alcohol to the treatment in the management of

these cases was then discussed. The direct effect of alcohol in these cases was unfavourable when taken alone, but with ammonia it might be given with advantage whenever the heart was commencing to fail in action; the solution of ammonia in alcohol might then be substituted for the aqueous solution, or brandy might be given in half-ounce doses every hour; alcohol, however, was only to be held in reserve as an adjunct rather than a remedy. The course of the symptoms during recovery, the dangers that appeared, the changes of blood, and the risk of secondary pathological modifications in remote organs, and especially in the spleen, were described and subjected to practical comment. In conclusion, the author stated that prognosis was much more favourable when fibrine had separated on the left than on the right side of the heart, the breaking away of the fibrinous mass on the left side being followed sometimes by immediate relief to the heart and by ultimate recovery. He mentioned a case where he had been summoned from town to attend, and he left the patient apparently "in articulo mortis," and he was only able to comfort the friends with the hope that the concretion might possibly break away, and the heart become relieved. Shortly after he had gone, the event thus hoped for actually occurred; the semi-conscious patient was almost immediately relieved, and except for some temporary numbness of the lower extremities, for the concretion was carried in the abdominal aorta, recovery was completed without an unfavourable symptom. Although a much larger experience was demanded to improve the work he had set forth, Dr. Richardson felt, nevertheless, that a distinct advance had been foreshadowed for a class of cases hitherto considered hopeless; he thus felt it his simple duty to lay the comminutive instalment, as it was, and nothing more, before his fellow practitioners of the healing art.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 57.—*Indigestion and its Management.*

By BRADFORD S. THOMPSON, M.D., New York.

(*American Practitioner*, July, 1872.)

Dr. Thompson, in his paper on this subject, alludes to a case under his observation where everything appeared to the patient double; in another every object seemed inverted; and in another, total blindness came on, which continued for twenty-one hours. The latter patient, a conch-woman, of Key West, Florida, aged forty-seven, was in the habit of eating prodigiously of a salad made from the indigestible conch, which abounds in that latitude.

In the indigestion of childhood the use of Boudault's pepsin wine can be highly recommended. This is prepared from pure pepsin, according to the formula of Dr. Corvisart, and is very palatable. Each dose possesses fully the digestive power of fifteen grains of the powder.

This preparation, he states with much confidence, is superior to all other preparations of pepsin in use. It should be given immediately before a meal.

In regulating the diet, the author would impress upon the patient the necessity of observing the subjoined rules: 1st. Enjoin frequent and regular eating in the majority of cases. It was a remark of Sir William Temple, "that the stomach is like a schoolboy; if idle, always in mischief." The deduction drawn from this is to keep the stomach moderately employed. 2nd. Let the diet be simple, always consisting exclusively of one article. 3rd. Drink little or nothing while eating. 4th. Exercise should not be permitted directly after eating. In many cases a voracious appetite attends this affection; but in the majority of cases there is very little inclination to eat; and under these circumstances it will not be amiss to attend to the following particulars for the purpose of exciting the appetite: do not let the patient know what he is to eat. The food should always be cold; when hot the odour will often destroy the appetite. The dishes should always be small; for nothing is more distressing to a patient with a delicate stomach than a large dish of meat placed before him. These circumstances, though apparently trivial in their character, are very important, and deserve recollection.

Art. 58.—*Nux Vomica in Dyspepsia.*

By J. E. Nichols, M.D., Osage, Iowa.

(*Chicago Medical Journal.*)

Dr. Nichols states that in this affection his main reliance is nux vomica in small tonic doses. If there is little or no trouble beyond the stomach he gives:—℞ Fl. ext. nux vom., ʒiij; alcohol, ʒvj. M. Sig. Five drops in a little water before each meal.

If there is some irregularity of the bowels, with the pain of epigastrium around to the right hypochondrium, he combines the mandrake as follows:—℞ Fl. ext. nux vom., fl. ext. mandrake, alcohol, āā ʒiij. M. Sig. as the other.

Where there is much complaint of wakefulness at night, horrid dreams, &c., he gives in addition to the foregoing: ℞ Iodide potassium, ʒss; chlorate potassium, carbonate potassium, āā ʒj. M. Ft. pulv. div. in chart. xx. Sig. One in half a glass of warm milk each night at bedtime.

If, as is often the case, a large portion of the day witnessed pain in the head, throbbing in the temples, he administers bromide of potassium and syrup for a morning potion, as soon as the patient awakes. Sometimes gelseminum is combined, thus: ℞ Fl. ext. nux vom., fl. ext. mandrake, fl. ext. gelseminum, āā ʒiij. M. Sig. as the others.

In cases of troublesome nausea, heartburn, acrid or fetid eructations after eating, he uses phosphate of lime rubbed up with loaf sugar; or, in place of this, ℞ Syr. amanti, ʒvj; arom. sul. acid, ʒij. M. Sig. Teaspoonful an hour after each meal, or whenever the eructations are troublesome.

Art. 59.—*Pharyngitis and Rhinoscopy.*

By Harrison Allen, M.D., Surgeon to Philadelphia Hospital.

(*Philadelphia Medical Times*, August 1; and *The Medical Record*, September 16.)

Dr. Allen says that in pharyngitis dependent upon general naso-pharyngitis, no instrument can approach in efficacy the atomizer. The best form of this instrument with which he is familiar is that known as the Sass sprayer. The peculiarity of this instrument consists in the test-tube receiver, which is held in the left hand, and a pair of very long barrels, the points of which, when the receiver is near the mouth, are lodged within the axis of the pharynx; the whole being worked by a bulb and tubing held in the right hand. In specific ulceration of the naso-pharyngeal space, he has obtained good results from the use of a solution of sulphurous acid of one drachm to the ounce, sprayed upward through the naso-pharyngeal aperture; or the pure acid may be applied to the affected spot if the part thus operated upon lie below the palate. Where there is abundant mucus, as in lingering acute catarrh, a spray of strong alum water proves oftentimes efficacious. It is in this class of cases that insufflations of alum are of advantage. The best insufflator is a simple glass tube, bent at convenient angles and furnished with a fenestra at about its middle; a light piece of india-rubber tubing attached to one end of the glass tube completes the instrument. The powder to be used is inserted in the glass tube through the fenestra, which is then covered by a sliding cylinder of rubber. The instrument now being inserted in the pharynx, with the orifice of the tube pointing upward, the opposite end of the instrument is held between the lips of the operator, who quickly blows the powder up into the naso-pharyngeal space.

In closing this clinical lecture, he advocates the nasal douche as an adjunct to the treatment; more, however, as an aid in *washing* the parts than to medicate the region. Weak solutions of salt, or carbonate of soda, used *tepid*, will meet every indication. The washing need not be repeated oftener than once a day—say at the time of the morning toilet.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

Art. 60.—*On the Part played by Nerves in the Production of Artificial Diabetes.*

By Dr. E. Cyon, and Dr. Aladoff.

(*Bulletin de l'Académie impériale de Saint-Petersbourg*, viii.; *Archives. Générales de Médecine*, Juillet, 1872.)

It is well known that diabetes cannot be produced by puncturing the fourth ventricle after the splanchnic nerves have been divided. On the contrary, one cannot by dividing these nerves after puncture of the ventricle arrest the diabetes which has already been produced.

These facts, which were demonstrated by M. Claude Bernard, have not as yet been explained. Pavy found that section of the last cervical ganglion of the great sympathetic was followed by diabetes. Eckardt also found that section of a cervical or a thoracic ganglion produced, like puncture of the fourth ventricle, diabetes, the morbid condition being due to an irritation of the nervous centres affected by the operation. By dividing, on the other hand, the splanchnic nerves between the ganglia, the fibres which would produce the diabetes are paralysed.

The authors sought in the first place to learn whether section of the ganglia would really produce an irritative diabetes as was supposed by Eckardt. They completely excised the ganglia in dogs, and found that after this operation the animals were affected with diabetes quite as rapidly as after section of the ganglia, and that their urine constantly contained a high proportion of sugar. To obtain this result it was sufficient to excise the last cervical ganglion, an operation which is always followed by paralysis of the vaso-motor nerves of the upper extremity.

It seems evident that the diabetes thus produced is due to paralysis of certain nerves which are in direct communication between the first thoracic ganglion and the last cervical ganglion.

The authors next studied the nerves which pass to and from the inferior cervical ganglion. They found that diabetes was produced only in cases where they had divided the two vertebral branches or the two nerves which pass to the first thoracic ganglion and which surround the subclavian artery in forming the ring of Vieussens. Section of other nerves has absolutely no influence on the production of sugar.

The nervous filaments, the paralysis of which produces diabetes, pass from the cord through the vertebral branches, then traverse the inferior cervical ganglion, from which they proceed by the ring of Vieussens to the first thoracic ganglion.

In order to investigate the ultimate course of these nerves the authors made a subcutaneous section of the great sympathetic between the tenth and twelfth ribs in a dog; this operation was never followed by diabetes; but subsequent section of the inferior cervical and the first thoracic ganglion on the same side likewise produced no result. On the other hand, by dividing the great sympathetic after extirpation of these ganglia, sugar still remained present in the urine.

These results, which agree in all points with those of M. Claude Bernard, prove that the great sympathetic as well as the splanchnic nerves contain two kinds of nerves the actions of which are quite opposed. Some proceed from the first thoracic ganglion, and their paralysis causes diabetes; the others have a more remote and spinal origin, and paralysis of these prevents the development of diabetes.

It seems more than probable from the results of these experiments that we have to deal here, according to Schiff's supposition, with vaso-motor nerves: in fact, the authors have made out that by irritating the ring of Vieussens, phenomena of contraction may be produced in the small vessels of the surface of the liver, these contractions being characterized by the production of dark-coloured spots corresponding to the limits of the acini. In order that they might study this phenomenon

with certainty, a T-shaped canula was placed in the hepatic artery, and the pressure was measured. Excitation of the ring of Vieussens was followed by an increase of the pressure from 30 to 70 millimetres of mercury; at the same time the pressure in the carotid was increased only from 5 to 10 millimetres. The pressure in the vena porta was raised only from 10 to 12 millimetres. On the other hand, section of the ring of Vieussens was followed by a diminution of pressure in the hepatic artery, which reached its maximum in the course of from ten to fifteen minutes.

Resting upon these facts, the authors attribute artificial diabetes to a dilatation of the arteries of the liver, and to a consequent increased flow of blood to this organ. To explain the absence of diabetes after section of the splanchnic nerves, or of the ganglionic portion of the great sympathetic, it is necessary to observe that these two operations cause simultaneous dilatation of all the vessels of the abdomen. Moreover, the dilatation of the hepatic arteries is not excited by a more considerable supply of blood to the liver, for a great part of the blood finds itself directly taken up by the other dilated vessels.

In conclusion, the authors point out a difference which exists between the diabetes which follows puncture of the fourth ventricle, and that produced by the operation above described; in the former instance, there is always hydruria; in the latter, this condition is absent. The probable explanation of this fact is, that the puncture causes a simultaneous lesion of some vaso-motor nerves of the kidney.

Art. 61.—*A Case of Diabetes following Dislocation of the Seventh Cervical Vertebra.*

By Dr. W. Muller, of Jena.

(*Archives Générales de Médecine*, Août, 1872.)

A man, aged sixty years, fell from a ladder, and remained unconscious for some minutes. When he came to himself he found that the right half of his head was swollen, and the neck painful on movement. He could not carry his head quite erect. There was absence of paralysis, and of difficulty of phonation or deglutition. He recovered in the course of fifteen days. Fifteen days later the patient commenced to suffer from intense thirst, and passed a very considerable quantity of urine containing sugar; he complained of loss of appetite, activity, and emaciation. Two and a half years after the accident the man succumbed with symptoms of phthisis.

Autopsy.—The seventh cervical vertebra was bound to the sixth by osseous anchylosis. The articulation of the seventh cervical with the first dorsal vertebra presented no anomalies. The body of the last cervical vertebra seemed to be placed behind the bodies of the neighbouring vertebræ, and its anterior surface presented marked flattening. The cervical ganglia of the sympathetic nerve on each side seemed to be normal; also the first thoracic ganglia, the anterior and posterior roots of the nerves, and the intervertebral ganglia of the sixth and

seventh pairs. On making a transverse section near the upper face of the seventh vertebra a hard and resistant mass of callus was found.

On microscopical examination, no trace of lesion could be found, either in the discs or in the floor of the ganglionic cells of the fourth ventricle. The tunica adventitia of some of the vessels in this region presented at several points slight thickening, due to cellular infiltration. The perivascular spaces seemed to have increased somewhat in size.

The spinal cord, as far as the seventh cervical nerve, and from the origin of the fourth dorsal nerve downwards, presented no lesion. Between these two nerves were observed a partial disappearance of the grey substance at the bases of anterior cornua, particularly at the right side, and a substitution of a loose connective tissue; this change was doubtless due to a disintegration of the grey substance which had followed dislocation and fracture of the seventh cervical vertebra. The cervical and thoracic ganglia of the great sympathetic nerve were in a normal condition.

The diabetes seemed to have been due to a lesion of the cord; indeed it was produced at a point where the spinal lesion had already taken place. Schiff and Eckardt have demonstrated that a lesion of this portion of the cord may be followed by artificial diabetes. Muller regards the dilatation of the perivascular spaces as a fortuitous circumstance. Diabetes may exist without this lesion, and *vice versâ*.

Art. 62.—*Treatment of Diabetes Insipidus.*

By Gueneau de Mussy, M.D.

(*Medical Press and Circular*, October 16.)

Dr. Gueneau de Mussy recommends the administration of full doses of belladonna and sulphurous baths in the treatment of diabetes insipidus. Its use in incontinence of urine is well established. Systematically employed in diabetes insipidus, it has diminished the quantity of urine passed from ten pints to two pints *per diem*. The sulphurous bath brings the skin to the relief of the kidney.

Art. 63.—*Cases of Diabetes Mellitus treated with Lactic Acid.**

By John W. Ogle, M.D.

(*Medical Times and Gazette*, Aug. 24).

Dr. Ogle described several cases of saccharine diabetes, in which he had, in addition to the use of a non-amylaceous diet, used lactic acid in

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* Read before the British Medical Association.

considerable quantities. The details and results of some of these had been already mentioned in some of the weekly periodicals; and Dr. Ogle now brought before the Section the particulars of two cases which had recently been under his care at St. George's Hospital, and of which daily notes, with registration of amount of urine and its specific gravity, of the weight, and sometimes temperature, of the body, had been carefully noted. The two cases were admitted into hospital on the same day—one being a male, aged 20; the other a female, aged 28. In both cases meat, and non-amylaceous vegetables, with gluten bread, etc., were given for several days, without the administration of any remedies. In the case of the woman, who was treated for eleven weeks before the lactic acid was given, the urine ranged in quantities between 112 and 178 ounces per diem; after the use of the acid the quantity quickly sank, and throughout its use fluctuated between forty and seventy ounces daily, one day being as low as thirty ounces. During the whole of this time the specific gravity remained much the same as when the patient came to the hospital. In the case of the man, who was treated for seven weeks, under the lactic acid treatment no marked diminution of urine and no change in the specific gravity was observed; but, after its long continued use, whether owing to it or not was doubtful, great constipation came on, requiring active aperients. As regarded the weight of the body, in both cases during treatment it fell; in the man from 8st. 5lbs. to 7st. 7lbs., in the woman from 7st. 3lbs. to 6st. 8lbs. In the case of the man the temperature was chiefly *above* the normal, on one occasion only being below, and then it was 97·4—on one occasion reaching 102·8. In the woman it was almost always *below* the normal, mostly being below 98. In both cases the morning and evening temperatures were often taken, but neither one nor the other was uniformly below or above the other. In both cases the lactic acid was increased until four drachms were taken in the day, and this was persisted in for several weeks. In neither case were any sting-like pains, rheumatic or other, complained of during the entire treatment, and in neither was any noticeable perspiration produced. In both cases the sweet and hay-like smell of the breath existed. In neither case was there any indication of interference with or affection of the nervous system; power of movement of the entire muscular system, and sensibility, both general and of particular organs, was entire throughout. The uvula, palate, and pupils were natural. In neither case was there albumen or uric acid in the urine; and in neither was there any decided lung mischief manifest, though a degree of harshness of respiration was perceptible in the woman. Although in one case a decided diminution of the amount of urine without increase of specific gravity followed the use of the lactic acid, yet in both cases flesh and strength were lost, and Dr. Ogle did not think that these cases showed that any benefit arose from treatment.

Art. 64.—*The Lactic Acid Treatment of Diabetes.**

By Balthazar Foster, M.D.

(*Medical Times and Gazette*, August 24.)

Dr. Foster began by calling attention to the reduction of bodily temperature which reoccurred, and the bearing which this had on the respiratory theory of diabetes. By means of a diagram he showed the relation between daily excretion of sugar and water and the body-weight of the patients. He concluded, as the results of his analysis, that the lactic acid diminished the sugar excretion and the quantity of water passed; while it increased the bodily temperature and restored the functions of the skin.

Art. 65.—*On the Pathology of the Morbid State commonly called Chronic Bright's Disease with Contracted Kidney (arterio-capillary fibrosis).*†

By Sir William Gull, Bart., M.D., and Henry G. Sutton, M.B.

(*Medical Press and Circular*, July 10.)

The authors of this paper commence by stating that Dr. Bright and subsequent pathologists have fully recognised that the granular contracted kidney is usually associated with morbid changes in other organs of the body; and the disease in the kidney and the other coexistent morbid changes are commonly grouped and collectively termed "chronic Bright's disease." It is generally assumed that, in chronic Bright's disease, the kidneys themselves are the organs primarily affected; and, in consequence, a cachexia is induced through which other organs subsequently suffer and undergo chronic changes. The authors consider that the history of the disease does not support this opinion. The morbid changes in the kidneys themselves are first considered, the coarser anatomy being omitted. The microscopical appearances observed in granular contracted kidney are given in detail, and their conclusions on this point are as follows. The visible morbid changes in granular contracted kidneys are due to the primary formation of a fibroid or hyalin-fibroid substance in the intertubular parts, including the vessels, and to atrophy of the tubular and intra-tubular structures of the kidney. On this point the authors confirm the observations of Dr. Dickinson and other observers. And they further state that this formation commences in different parts of the kidney, commonly near the surface; but it also seems to commence in the outer coats of the arterioles, and in the walls of the capillary vessels. From these parts it extends round the convoluted tubes and Malpighian bodies. This fibroid or hyalin-fibroid substance subsequently contracts and draws the

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* Read before the British Medical Association.

† Read at a Meeting of the Royal Medical and Chirurgical Society, May 28th.

Malpighian bodies together, compresses the urinary tubules and vessels, and may entirely obliterate them. This thickening of the capillary walls, and the diminished calibre of some of the arterioles, must naturally interfere with the nutrition of the tissues and tend to produce atrophy; and the blood supply to the secreting cells being in this manner reduced probably causes diminished secretory function and atrophy from diminished use. The alteration in the renal epithelium, when great, is the result of the atrophy; and its slighter changes, such as granular appearance and desquamation of some of its cells, are not peculiar to granular disease of the kidney, such slighter changes being even consequent on the process of dying.

The morbid changes in the vascular system are next considered. Dr. Bright and subsequent observers have recognised that atheromatous arterial disease is common with granular contracted kidney. In 1852, Dr. George Johnson, in his work on "Kidney Disease," stated that the minute renal arteries are much thickened in chronic Bright's disease, owing to hypertrophy of the muscular coats of the vessels. A few years ago the same writer pointed out that the arterioles, not only in the kidney, but in the skin and other parts of the body, are thickened and their muscular coat hypertrophied in chronic Bright's disease. Sir W. Gull and Dr. Sutton describe at considerable length the changes that they have found in the minute arteries and capillaries of the kidneys, pia mater, and other parts; and they state that their observations show that the minute arteries and capillaries are thickened in chronic Bright's disease, and they remark, "we gladly acknowledge the debt the science of medicine owes to Dr. George Johnson for so distinctly insisting upon this fact." The microscopical observations of Sir William Gull and Dr. Sutton show that the arterioles and capillaries are more or less altered in chronic Bright's disease. This alteration is due to the hyalin-fibroid formation in the walls of the minute arteries, and hyalin-granular changes in the corresponding capillaries; that this formation occurs chiefly outside the muscular layer, but it also occurs, but to a less extent, in the tunica intima of some of the arterioles. Further, that the degree in which the affected vessels are altered, and the extent to which the morbid change is diffused over the vascular system of the different organs, vary much in different cases. The muscular layer of the affected vessel is often atrophied in a variable degree. The authors recognise that some pathologists may consider that the perivascular canals are the seat of these hyalin-fibroid changes. On the existence of such canals they express no opinion, they assert only that the morbid changes are chiefly outside the muscular layer of the arterioles. The arterio-capillary changes observed in chronic Bright's disease are not seen in the vessels of healthy persons who have been accidentally killed or who have died of phthisis and of other diseases not allied to chronic Bright's disease.

The condition which induces the vascular change is next considered. Dr. George Johnson states that the general arterial thickening is due to muscular hypertrophy. He considers the blood is impure in consequence of the kidney disease, and the arterioles resist the passage of this impure, more or less noxious blood, and in doing this they become hypertrophied. The left ventricle of the heart, therefore, makes an

increased effort to drive on the impure blood, and the result of this antagonism of force is, that the muscular walls of the arteries and those of the left ventricle of the heart become in an equal degree hypertrophied. This theory Sir William Gull and Dr. Sutton do not accept, for their observations show that arterial changes are not dependent on muscular hypertrophy but on hyalin-fibroid formation. They have found the heart and vessels healthy in cases of chronic disease of the kidneys, and, further, their inquiries show that the cardiac and vascular changes may occur independently of renal disease. Cases given in the appendix to this paper are then alluded to, which show that there is a general morbid state in which the kidneys may be contracted, the heart hypertrophied, and the minute arteries and capillaries altered by a hyalin-fibroid formation. The kidney changes are most often, but by no means always, part and parcel of this morbid state, and their absence shows that the renal changes are not an essential and indispensable part of the general process: but as the vascular system is at some part affected with this hyalin-fibroid change in all the cases, therefore they conclude that the vascular disease is to be regarded as the constant and essential part of this morbid state. The pathology of this hypertrophy of the left ventricle is next considered. Bright considered that the quality of the blood was altered by the kidney disease, and the heart, in consequence, had to contract with greater power to force the morbid blood through the vascular system, and became hypertrophied in order to accomplish this. Many pathologists have adopted Bright's explanation. Dr. Wilks, in 1853, suggested that the hypertrophy might be dependent on atheromatous changes in the vessels. Against the explanation offered by Bright and others, the authors state that the frequent association of cardiac hypertrophy and renal disease does not prove that there is a causal relation between these two morbid states. Moreover, that in many cases where there is chronic disease of the kidneys, and the blood therefore presumably impure, the heart is not hypertrophied—instance, large white, lardaceous and scrofulous kidneys, as well as some cases of granular contracted kidneys. Dr. Johnson has endeavoured to account for the absence of the hypertrophy in such cases by assuming that the muscle of the heart is imperfectly nourished. The authors consider this suggestion, and state this may explain a dilatation disproportionate to the hypertrophy, but it does not explain how a normal-sized heart acquires additional force requisite to overcome the supposed obstruction. Evidence is next brought forward to show that the cardiac hypertrophy is induced by the morbid changes referred to in the vascular system, the heart being found hypertrophied in all the cases in which the vessels were much and generally thickened by hyalin-fibroid change; slightly hypertrophied where the vessels were little thickened; and greatly hypertrophied where the vessels were much thickened, although there might be little or no kidney disease. The hyalin-fibroid change is assumed to impair the elasticity of the vessels, thus imposing upon the left ventricle a necessity to contract with greater force to carry on the circulation.

The other conditions which make up the morbid state known as chronic Bright's disease are next noticed—namely, vesicular emphysema, retinitis albuminurica, atrophied brain, contracted spleen, and morbid

changes in the intertubular parts of the stomach. In all these conditions it is shown that the arterioles are more or less thickened by fibroid or hyalin-fibroid changes. This general morbid state is shown to belong principally to the period of life at or after forty years of age, and after forty its frequency greatly increases as age advances. It is pointed out that the kidneys, even in children or in other young persons under adult age, are sometimes much contracted and death caused by uræmic poisoning, without the cardio-vascular changes alluded to. But the general hyalin-fibroid change in the vessels may occur in early life; and, in proof, the case of a girl, aged nine years, is mentioned, where the kidneys were granular and very contracted, the heart hypertrophied, and there were hyalin-fibroid changes in the arterioles of the pia-mater.

The authors desire to show that in the state known as chronic Bright's disease with contracted kidney, the morbid changes described do not arise in a constant order. In some cases the changes seem to commence in the kidneys or in the heart, sometimes in the lungs or in the brain, or in other organs; hence the symptom of the disease varies very much in different cases. In all cases, whether many or few organs are affected, the minute arteries and capillaries are altered by hyalin-fibroid formation, attended with atrophy of the adjacent textures. The authors cannot regard the functional disturbances which occur in many organs during chronic Bright's disease with contracted kidney as dependent on blood changes only or chiefly—as, for instance, pain in the head, discomfort after food, palpitation, dry skin, epistaxis &c. These are probably due not so much to changes in the blood as to changes in the tissues themselves.

The conclusions arrived at in the paper may be briefly summed up as follows: 1. There is a diseased state characterized by hyalin-fibroid formation in the arterioles and capillaries. 2. This morbid change is attended with atrophy of the adjacent tissues. 3. It is probable that this morbid change commonly begins in the kidney, but there is evidence of its beginning primarily in other organs. 4. The contraction and atrophy of the kidney are but part and parcel of the general morbid change. The kidneys may be but little, if at all, affected, whilst the morbid change is far advanced in other organs. 5. This morbid change in the arterioles and capillaries is the primary and essential condition of the morbid state called chronic Bright's disease with contracted kidney. 6. The clinical history varies according to the organs primarily and chiefly affected. 7. In the present state of our knowledge we cannot refer the vascular changes to an antecedent change in the blood due to defective renal excretion. 8. The kidneys may undergo extreme degenerative changes without being attended by the cardio-vascular and other lesions characteristic of the condition known as chronic Bright's disease. 9. The morbid state under discussion is allied with the conditions of old age, and its area may be said hypothetically to correspond to the "area vasculosa." 10. The changes, though allied with senile alterations, are probably due to distinct causes not yet ascertained.

Dr. Broadbent must say that, if he had to give up the idea that what he had seen in the preparations of hypertrophied arterioles was muscular, he would have to give up altogether the muscularity of the walls of arteries. Dr. Johnson said that the thickening was due to muscular

hypertrophy; Sir William Gull and Dr. Sutton ascribed it to what they called hyalin-fibroid deposit. It was stated that it could not be dependent on this form of kidney disease, because it was not met with in other forms, but the blood was not in the same state in all forms of renal disorder. The authors stated that cardio-vascular hypertrophy was not constant in granular contracted kidney. True, but the exceptions were rare, and did not prove anything against Dr. Johnson's theory. If the changes in the vessels were degenerative, their walls should be rendered inelastic, arterial tension and the power of contraction and relaxation being lost. But he had seen a case of granular kidney with well-marked cardio-vascular changes (a long persistent pulse, hypertrophy of the heart, and reduplication of the first sound), in which one day all these conditions had disappeared, and the pulse had become pyrexial; these physical variations were inconsistent with the theory of rigid tubes. He had also known under the use of nitrite of amyl evidence of arterial tension appear in cases where it had previously been absent.

Dr. George Johnson said the question is, what is the nature of the thickening of the walls of the minute arteries in the kidney and in most of the tissues in cases of chronic Bright's disease? He maintained that the thickening was a genuine hypertrophy of the muscular coat of the artery, while the authors of the paper denied the existence of hypertrophy, and declared that a hyalin-fibroid degeneration external to the muscular coat constituted the essential change. The question was to be decided by an appeal to actual specimens, and not by arguments. He had placed specimens on the table, which had been declared to be examples of hypertrophy by large numbers of men, including Dr. Sharpey, Dr. Carpenter, Sir James Paget, and Dr. Rutherford. He was surprised to find that the authors had not produced their specimens. He suggested, from the appearance of the drawings, that the authors had described as pathological that swollen and translucent appearance of the tunica adventitia which was commonly produced by the imbibition of fluid, especially when with that fluid is mixed glycerine or dilute acetic acid.

Dr. Silver said that the point which was of practical importance was the condition of the urine. In some forms of contracted kidney this was large in quantity, containing little albumen or urea; and this enlarged quantity of fluid must arise from increased pressure on the part of the vessels, while the small amount of albumen showed that the filtering portion of the kidney was not much affected. This condition appeared capable of explanation by Dr. Johnson's theory of general hypertrophy of the arteries, by which the blood-pressure in the kidney was increased.

Mr. Brudenell Carter said the changes in the retina were once supposed to be pathognomonie of albuminuria, but it was now known that they might be present without that symptom. Again, there was no constant relation between the retinal and the renal affections. In many cases of Bright's disease the retina escaped for a long period; in some cases it escaped altogether. In many others, on the contrary, the troubled retina was the cause of the patient's seeking advice; and the ophthalmoscopic examination first led to the discovery of albumen in the urine. The retinal changes, again, differed greatly in different in-

stances—the white patches sometimes preceding, sometimes following, the characteristic hæmorrhages. On the whole, the weight of evidence was opposed to the supposition that the retinal was an effect of the renal disorder, and was in favour of the supposition that both were the effects of some more general cause, and that each, for a certain time at least, might exist independently of the other.

Dr. Anstie asked Dr. Broadbent whether he was aware of the extent to which the muscular tissue of the arterioles remained sufficiently intact to be sensible of the action of nitrite of amyl, even in very advanced states of degeneration. He (Dr. Anstie) had given nitrite of amyl to patients in whom the arterioles must have been extremely degenerated by the effects of old age; nevertheless, the usual dilatation was well marked—indeed, alarmingly so.

Mr. Hulke said that he had found in the retina (associated with albuminuria) true muscular hypertrophy of the arteries, and also true sclerosis, two conditions perfectly distinct, but sometimes commingled—*i.e.*, hypertrophy followed by sclerosis.

Dr. Rutherford thought that an examination of the microscopic specimens exhibited by Dr. Johnson was sufficient to satisfy any impartial observer that there is a positive increase in the number of muscular fibres in the walls of the vessel. In Dr. Johnson's preparations the appearances indicative of hyalin-fibroid as well as the results of the so-called capillary fibrosis.

Dr. Symes Thompson briefly subscribed his belief in Dr. Johnson's views.

Sir William Gull, in replying, said that the object of the paper was important in a therapeutic sense. The somewhat antithetical views set forth in the paper deserved the fullest discussion, whether the affection began, according to former pathologists, locally in the kidney, and so, by extension of morbid influence through the blood, producing a change in the heart and arteries, or whether the disease had, as it was now attempted to show, a more general beginning in the arterioles, the kidneys becoming contracted as a part of the general morbid change. Dr. Broadbent's argument that the cardiac and vascular changes might be limited to one form of renal disease, and not producible by other forms of kidney degeneration, was at present an hypothesis only, and not supported by the fact that extreme contraction and degeneration of the kidneys in young persons did not produce the cardiac and vascular changes which on such supposition should occur with it. Dr. Bastian and Dr. Dickinson gave clinical evidence supporting the views advocated in the paper; the former pointedly stated that dyspnœa was one of the early symptoms, and the latter said that in the early stage of the disease the urine is free both from albumen and casts. The clinical history of chronic Bright's disease, though not included in this paper, seemed distinctly to show that the renal affection may be developed at different stages of the disease. Sir William Gull concluded by saying that it had long been a dream of the authors of this paper that the lines of pathological change in later life, so far as they were essential, in contradistinction to merely accidental influences, would be found to correspond with the lines of early development. Chronic Bright's disease with contracted kidney appeared to the writers of the paper to belong to the area vasculosa.

He wished emphatically to record that his colleague, Dr. Sutton, must properly claim whatever credit was due with reference to the morbid anatomy of the subject.

Dr. Sutton, in reply, said that the changes observed in the vessels were dependent on a diseased condition, for a great number of specimens prepared in the same manner had been examined, and the vessels taken from persons accidentally killed, or who had died from tuberculosis, fever, or other acute diseases, did not present this hyalin-fibroid appearance, which showed the condition to be a morbid one. Where the vessels had undergone the hyalin-fibroid change, the kidneys were found diseased, or there were cardiac hypertrophy and the other morbid conditions commonly found in chronic Bright's disease. He thought that the thickening of the arterioles was not dependent on muscular hypertrophy.

Art. 66.—*Treatment of Lithiasis.*

By Leonidas Crews, M.D.

(*Atlanta Medical and Surgical Journal*, June.)

In lithiasis, with frequent micturition, ardor urinæ &c., without renal or cystic calculi, Dr. Crews has repeatedly given bromide of potassium with tincture of belladonna, and can confidently recommend them.

Art. 67.—*Renal Disease following the External Use of Juniper Tar.*

By Dr. Kirchheim.

(*Berliner klin. Wochenschr.*, and *British Medical Journal*, July 6.)

Dr. Kirchheim relates the case of a man, aged 23, suffering from eczema, for whom a mixture of juniper tar (*huile de cade*) and glycerine was ordered for external application. After he had applied it about three days, he felt unwell, had headache, lost his appetite, and his urine was scanty, dark-coloured, and cloudy. These symptoms were followed by pain and tenderness in the region of the kidneys, œdema of the lungs (and afterwards pneumonia), and albuminuria. He was treated with benzoin and warm baths, and with iron and quinine as tonics, and recovered after an illness of two months.

(f) concerning the cutaneous system.

Art. 68.—*The Therapeutics of Diseases of the Skin.*

By J. McCall Anderson, M.D., Professor of Practice of Medicine in Anderson's University.

(*Diseases of the Skin.* Pp. 180. London. 1872.)

In the treatment of diseases of the skin, as of most other complaints, it will be found that there are often different ways of arriving at the

same goal. In Germany, especially in Vienna, local treatment, Dr. Anderson states, is principally relied upon, while in England it appears that constitutional treatment is too exclusively resorted to. Some diseases of the skin, the author writes, are best treated by local, others by constitutional, treatment, while a few may be cured by either; but the majority of them yield most readily, and are removed most permanently, by a mixed local and constitutional treatment. In speaking of purgatives or aperients, Dr. Anderson says they are of service in a large proportion of cases, at the outset at all events, and many can be cured by the exclusive use of them. This is especially true of the eczematous group when seen in the early or acute stage, and when associated with digestive derangement or constipation. In doubtful cases it is safer to inaugurate the treatment with aperients; but it must never be forgotten that where debility is well marked, or where there is a decided tendency to ulceration, great caution is required in the use of purgatives. A very excellent aperient is the well-known sulphate of magnesia and sulphuric acid mixture, to which, if there is a gouty tendency, a little wine of colchicum, or, if anæmia, sulphate of iron, may be added as follows: Sulphate of magnesia, three ounces; dilute sulphuric acid, an ounce and a half; sulphate of iron, three drachms; simple syrup, four ounces; tincture of ginger, one ounce; infusion of quassia to twenty-four ounces; a tablespoonful, in a good deal of water, three times a day.

Another very useful tonic aperient, especially if the bowels are easily moved and there are indications of nervous debility, is the following: Phosphate of soda, three ounces; dilute phosphoric acid, two ounces; syrup of ginger, four ounces; compound infusion of gentian, eight ounces; distilled water to twenty-four ounces; shake the bottle. A tablespoonful, in a large wineglassful of water, to be taken three times a day. As so many affections of the skin occur in connection with, if not in consequence of, the system being below par, *tonics*, especially iron and arsenic, are frequently indicated. With the exception, however, of *arsenic*, which is the great cutaneous tonic, it is unnecessary to point out the indications for their use, as these are the same as in the treatment of disease in general. There is much difference of opinion as to the use of arsenic, and while Dr. Anderson is altogether opposed to those who are inclined to disparage its virtues, he is equally opposed to the view that almost all affections of the skin should be treated by means of it. At the present time the author of this excellent brochure contents himself with a very few remarks, which, for the sake of brevity, he makes in the form of aphorisms:—

1. Arsenic, judiciously administered, is as safe a medicine as any in the pharmacopœia, and may often be used for months without injury to the general health.

2. It often requires to be continued for many weeks, and sometimes the disease seems to resist its action for a considerable time, when all of a sudden improvement occurs, followed by a rapid cure.

3. It requires to be given in proportionately larger doses to children than to adults.

4. Infants may be subjected to its influence by administering it to their nurses.

5. The dose should be at first small, and not increased, as a rule, for some time. Then it may be gradually increased till the medicine disagrees, or till the disease begins to yield, when it may as gradually be diminished.

6. It should not be omitted altogether without very good reason, but may be tried in smaller doses, or in another form, or omitted for a few days till the bad effects have passed off.

7. Puffiness of the face, or irritation of the eyes, or such like physiological effects, if slight in degree, should not lead us to discontinue the medicine; indeed, it is sometimes only then that its beneficial action on the disease is observed.

8. It is decidedly contra-indicated in acute cases; and when its use is followed by marked increase of the irritation of the skin (itching, heat &c.) the disease is probably not in a state to be benefited by it.

9. It is generally more rapidly effectual if the disease, though in a chronic state, is recent; and the first attacks yield more readily to it than subsequent ones, as a rule.

10. It is contra-indicated in most cases which are complicated with digestive derangement.

11. It is apt to produce bronchial catarrh, so that patients should be warned to avoid exposure to cold while taking it; and for this reason it is generally contra-indicated in persons labouring under bronchitis.

12. In exceptional cases it may be given with benefit in large doses.

13. It sometimes requires to be given during meals, or immediately after food is taken; for when administered on an empty stomach it occasionally deranges the digestive organs, and it is often better tolerated if given along with a bitter infusion.

14. It should not, as a rule, be entirely discontinued until some weeks have elapsed since the complete disappearance of the eruption.

15. There are few chronic diseases of the skin of constitutional origin—provided they are not syphilitic—which may not be benefited by it (although often other treatment is to be preferred to it), but it is especially valuable in psoriasis, pemphigus, lichen ruber, pityriasis rubra, and in many cases of eczema, unless contra-indicated as above.

Art. 69.—*Report on Cutaneous Statistics, derived from the Practice of the Belfast Hospital for Skin Diseases.*

By Henry Samuel Purdon, M.D., Physician to the General Hospital, also to the Hospital for Skin Diseases, Belfast.

(*Dublin Journal of Medical Science*, October.)

In this paper Dr. Purdon directs attention to the statistics derived from the practice of the Belfast Hospital for Diseases of the Skin. The total number of cases observed during the last seven years amounts to 5747.

The only variety of *erythema* worthy of note, and of frequent occur-

rence amongst factory workers, who go barefooted and stand at their work for hours, is erythema nodosum. *Eczema*, with the exception of scabies, is the most common form of skin disease. For acute cases painting the part attacked with a solution of nitrate of silver dissolved in sweet spirit of nitre, and subsequently covering with zinc ointment, or an ointment of zinc, prepared chalk, and a few drops of carbolic acid, to allay itching, is the plan adopted. If the part be covered with hair, dilute citrine ointment and carron oil answers admirably. For chronic cases Hebra's methods of treatment with solutions of potassa fusa, tar, oil of cade, black soap &c. are adopted. Carbolic acid has not succeeded in the author's hand in eczema, although highly valuable in psoriasis when there is not much hyperæmia of the skin, used both outwardly and internally. He agrees with Mr. Erasmus Wilson, that the cause of eczema is debility, and adopts his arrangement—viz., into assimilative, hereditary, neurotic, and local, as the best and most satisfactory division of its causes. Arsenic has not been much used in the treatment of eczema at the hospital, as when the disease is generally seen it is chronic, has become purely a local disease, accompanied by alteration in the cutaneous textures, and hence must be treated by local means. *Acne* is in the majority of cases due to stomach derangement, occasionally to uterine trouble. For hypertrophic acne nothing excels Mr. Wilson's hypochloride of sulphur ointment. All cases of *herpes zoster* (viewing this affection as a neurosis) have been recently treated with ergot of rye and steel, and that most satisfactorily, whilst locally merely zinc ointment or painting the vesicles with collodion was all that was considered necessary. During last year two cases of *urticaria* were beautiful examples of urticaria annulata, a rather rare variety. Colchicum was the remedy mainly relied on, followed by the hypophosphite of soda. The case of *dermatalgia*, or neuralgia of the skin, occurred in one person on the scalp; patient an adult male, who got well with pulv. ferri carb. and pulv. valerian. assisted by hypodermic injection of morphia. Dr. Purdon's cases of *morphœa*, which disease shows a degeneration or degradation of tissue, derived only temporary benefit. The treatment of *scabies* has been often varied: Hebra's ointment, compound sulphur ointment, iodide of potash ointment, and solution of the pentasulphide of lime are those generally used. The secondary eczema left after removal of original complaint has been attended to afterwards. *Alopecia areata* is usually chronic. Constant blistering with the linimentum cantharidis and attending to the general health gives, although slowly, good results. This affection the author has placed amongst the parasitic diseases, but more accurate information is required regarding its supposed fungoid nature. He prefers, however, to leave it where it is at present. He has never detected the fungus called the *microsporon Audouini*. Recent observers believe the disease to consist of an atrophied condition of the hair bulb, whilst, on the other hand, Tilbury Fox, McCall Anderson, and Bazin hold to the parasitic view. Some years ago, when studying cutaneous diseases in London, Dr. Purdon was much struck by the frequency of alopecia areata there compared with Glasgow, Dublin, Edinburgh, or Belfast, in all of which towns he had opportunities of seeing cutaneous practice. *Favus* is rare in England, and not so common in Ireland as in Scotland. McCall Anderson's statistics show

166 cases of favus occurring in 11,738 skin diseases of all kinds, whilst his exhibit 21 cases in 5747. The cases classed in the author's report as *favus et tinea cincinata* are interesting as showing the two diseases existing together. The Sydenham Society have published in their Atlas a very good plate of these two diseases occurring in the same individual. This supports the theory of only one fungus causing this group of diseases, which in a more matured form and stage of growth may give rise to favus. *Sycosis.*—One case of sycosis is worthy of note. By this disease Dr. Purdon means *parasitic* sycosis. The patient to whom he more particularly refers was aged 58, and worked in a foundry. Both he and his son-in-law were attacked at same time and with the same affection. The elder had tubercles the size of a walnut under his chin, slowly suppurating; in fact every part of his face that had hair upon it was involved. The treatment pursued was extracting the hairs by Bazin's forceps, made by Mathieu, Paris, then a solution of the bichloride of mercury, two grains to the ounce, was rubbed in, a little sweet oil being finally applied. After the disease seemed arrested, dilute citrine ointment, also a solution of nitrate of silver, were used. Quinine was given from the first. *Seborrhœa sicca*, or "dandriff," generally commences on either temple, extending backwards, and leaving a central region covered by hair; the baldness produced is usually permanent. The application of a lotion containing tannin, ether, glycerine, compound spirit of lavender and rectified spirit, has been found useful. *Onychia* is very common amongst female mill-workers in flax-spinning mills. They go barefooted, and a slight injury to the toe causes the disease, which is aggravated by the impure water &c. on floor of spinning room. *Xeroderma* was principally met with in children, being congenital. Small doses of antim. tart., and locally, cod liver oil or glycerole of starch, improved their condition. A case of *cutaneous horn* occurred in a middle-aged female servant. It was of some six or seven years' growth, and commenced like a common wart. The seat of the affection was left malar prominence, and its length about a quarter of an inch. *Elephantiasis Arabum.*—One case, thirty-three years in duration; both legs affected, and right enormously swollen; hard and brawny; covered by the peculiar scaly skin of elephantiasis; patient formerly a house-painter; an extensive ulcer complicated the disease. The other cases women. Pressure with a tourniquet over femoral artery, when lower limb is attacked, should be tried before proceeding to tie that artery for cure of disease. A case of *Tubercular Leprosy*, contracted in India, had been round the principal English hospitals and tried various plans of treatment. Anæsthesia was well marked over calves of legs and right fore-arm and hand; countenance frowning; alæ of nose ulcerated, as also fingers; could allow his arm to be cut or burnt, the anæsthesia was so complete; appetite good, as also memory. Carbolic acid internally and locally was tried, as lately recommended for leprosy; it made the anæsthesia worse. He had, just before coming under Dr. Purdon's care, been taking hydrocotyle asiatica, but without any benefit. *Lupus Erythematosus*, or seborrhœa congestiva of Hebra, was met with in four instances. It is a very obstinate disease to treat. Frictions with juniper tar soap and the application of a weak iodide of sulphur ointment were used. For ordinary lupus, nitrate of silver points,

potassa fusa, and the solution of the acid nitrate mercury, and in some cases painting with a hot solution of liquor plumbi, are those remedies in general use at the hospital. Of course they are not used indiscriminately, but suitable cases selected for using the different substances; whilst in a few cases the local means were assisted by the use of Neligan's solution of arsenic, iodine, and iodide of potassium. Epithelioma was treated in a few instances, as well as Rodent ulcer, with a saturated solution of chlorate of potass, a little opium being added to prevent pain. Operative interference had to be used in several cases. Some of the cases of syphiloderma were complicated by ulcerated throats, for which sulphurous acid spray was used, with one of Dewar's spray producers, and which had the desired effect in all cases.

Art. 70.—*A Case of Lupus of seven years' standing successfully Treated by Large Doses of Iodide of Potassium.*

By Robert Munro, M.A., M.D.

(*The Lancet*, October 19.)

The following case is worthy of being recorded, inasmuch as it is an additional evidence of the great value of iodide of potassium as a therapeutic agent in a class of diseases that have almost become an opprobrium to the healing art.

S. S——, a strong, muscular man, of a ruddy complexion, and twenty-seven years of age, consulted Dr. Munro about the middle of May, 1872, in regard to a lupus in his nose and face. The disease was of seven years' standing, and, besides involving the nose, the upper lip, the mucous membrane of the nostrils, and rather more than a square inch of the roof of his mouth, it extended in an irregular patch for about two inches down both cheeks. There was a slight but offensive discharge from the ulceration, and his breath had a fetid odour, which was thought to proceed from the ulcerated roof of his mouth. He was dispirited about his case, as he had already consulted many of the most noted surgeons in Kilmarnock and in Glasgow without benefit. From a written account which he gave of his own case, Dr. Munro could not gather much information in regard to his past treatment. Six years ago an eminent surgeon recommended him to have the diseased portion removed by the knife, but this he declined. A distinguished professor recommended some ointment, which, he says, had no effect whatever on his face. Others told him it was cancer and incurable. Latterly he fell into the hands of quacks, and had a plaster (probably arsenical) applied to the sore. In concluding his report he says: "I returned to Dr. —— again, as I did time after time, as a fox to his hole for safety." No syphilitic history could be elicited. About a year ago Dr. Munro saw a woman in Kilmarnock with psoriasis guttata, who had been taking arsenic for nearly twelve months without any benefit, except irritation of her eyes, but in a few weeks she got better under the internal administration of carbolic acid. This woman was a sister of the patient with lupus. The patient stated that his father at

certain seasons of the year had spots on his legs and arms similar to those on his sister. Thus psoriasis seems to have been in the family.

Dr. Munro at once commenced the treatment of the lupus by giving ten-grain doses of the iodide of potassium three times a day. On one cheek the disease was attached to the nose only by a narrow isthmus; and, wishing to observe the effect of a caustic on the sore he brushed over the whole of this nearly isolated portion on the cheek by the acid nitrate of mercury. The crust dropped off in a few days, and left the sore with a much more healthy appearance. At intervals of about a week other portions of the disease were touched with this caustic, until at the end of six weeks Dr. Munro had gone over the whole of the surface of the disease, so far as it manifested itself externally. Each crust was removed by poultices, and the sores then dressed with the following lotion: Carbolic acid, three drachms; sulphate of zinc, eighteen grains; water, twelve ounces.

About three weeks after the treatment was commenced the iodide of potassium was increased to one-scruple doses three times a day, and three drops of the liquor arsenicalis added to each dose. The progress of the case was very satisfactory; and about the beginning of August the patient's face was completely skinned over, and since then it has remained perfectly well.

Art. 71.—*On Iodide of Potassium in Syphilitic Skin Diseases.*

By J. McCall Anderson, M.D.

(*Diseases of the Skin.* Pp. 180. London. 1872.)

With regard to the employment of iodide of potassium in the treatment of syphilitic skin diseases, Dr. Anderson lays down the following rules:—

1. The longer the interval which has elapsed between the contraction of the syphilitic taint and the development of the eruption, the more confidently may we substitute it for mercury.

2. If the patient is cachectic it is, as a rule, to be preferred to mercury, except in recent cases of syphilis, when the mercurial vapour bath, or some such treatment, is more likely to prove successful.

3. The more extensive the tertiary eruption the more certain it is to yield to the iodide of potassium, although to this rule there are numerous exceptions.

4. If there is any tendency to syphilitic disease of the nostrils or neighbouring parts iodide of potassium should be withheld, or given with great caution, for if it produces coryza it is very apt to aggravate the morbid condition of the parts.

5. It should be given in full doses. Dr. Anderson's experience has led him to conclude that ten grains is the proper dose in the majority of cases, and that occasionally as much as thirty or forty thrice daily may be requisite. It is generally advisable to prescribe it in combination with a bitter, and in cachectic subjects a little iron is a valuable addition, as in the following prescription: Ammonio-citrate of iron, three drachms; iodide of potassium, one ounce; syrup of ginger, six

ounces; compound infusion of gentian, eight ounces; water to twenty-four ounces. A tablespoonful in a large wineglassful of water thrice daily.

Art. 72.—*Chloral as a Topical Application in Eczema.*

(*Boston Medical and Surgical Journal;* and *New York Medical Record,* October 1.)

A correspondent states that during the past year he has used in several cases of chronic eczema, with much satisfaction to his patients and himself, a solution of the hydrate of chloral as a topical remedy, in the proportion of one or two drachms to a pint of water, applied two or three times a day.

Art. 73.—*Erythema Fugax following the Use of Chloral.*

By William Ingalls, M.D.

(*New York Medical Record,* October 1.)

At a meeting of the Suffolk District Medical Society, Boston, Dr. Ingalls called attention to a symptom he had observed after the administration of chloral hydrate. He had prescribed a dose of six grains to be given for sleeplessness to a girl of eleven years, ill from general debility. After the first dose, nothing save the desired effect was observed. Sleep also followed the second exhibition the night following, but on the next morning spots of a red colour, deeper in hue than erythema, appeared successively on the cheeks, around the mouth, and behind one ear. There were no other symptoms, and the redness receded after eight hours.

Dr. Damon suggested that the appearance alluded to might be classed as erythema fugax, a neurosis of the skin depending on some such irritation of the stomach as chloral would tend to produce.

Art. 74.—*On Carbolic Acid in Skin Diseases.*

By J. McCall Anderson, M.D.

(*Diseases of the Skin.* Pp. 180. London. 1872.)

Carbolic acid is especially useful in cases of chronic psoriasis, when the patches are not much infiltrated, and not unfrequently Dr. Anderson says he has succeeded in removing the eruption after a fair trial of arsenic, although, on the whole, it is not so useful as the latter. The following case may prove interesting in connection with the above remarks:—

Psoriasis.—A lady, aged about thirty-five, who had undergone much anxiety and fatigue in nursing a sick child, was attacked for the first time by psoriasis. The patches, on an average about the size of florins,

were of a dusky red tint, but not scaly. They were very numerous, especially upon the arms and legs. She felt weakly and was incapable of much exertion, and the feeling of fatigue and lassitude was very marked at times; otherwise her health was good. She was subjected to an arsenical course by her medical attendant, but without benefit. She then consulted Dr. Anderson, when, the arsenical course having failed, four grains of carbolic acid in solution was prescribed thrice daily. There was immediate improvement. The feeling of lassitude and exhaustion diminished, the eruption began to fade, and in a few weeks she was quite well.

SECT. III.—FORENSIC MEDICINE.

ART. 75.—*On the Diagnosis of Phosphorus Poisoning by Means of a Sign Furnished by the Urine of the Patient.**

By M. POULET.

(*Gazette Médicale de Paris*, No. 33, 1872.)

Phosphorus having been absorbed by the digestive passages is eliminated in the urine in the condition of hypophosphoric acid.

The presence of hypophosphoric acid in the urine may be easily detected by calcination, pure nitric acid having been previously added.

As the specimen of urine approaches the state of dryness, a very remarkable phenomenon may be observed: the mixture suddenly takes fire and burns like a packet of matches.

Poisoning by phosphorus, especially when slow, may be, and indeed has been, confounded with certain quite spontaneous internal affections, amongst which gastritis and fatty degeneration of the liver occupy the first place. An analysis of the urine by this very facile proceeding furnishes a certain diagnostic sign, and may in suspicious cases enlighten the practitioner and set him upon the track of the terrible truth. For the future, then, so precious a means of investigation ought not to be neglected.

It is possible for a criminal intention to simulate more or less perfectly an internal malady, inflammatory or otherwise, by prolonging the life and sufferings of the victim by a coolly-calculated diminution of the doses of the poison. Hence two equally unfortunate results are realized: a very execrable crime remains unpunished, and therapeutics is completely hoodwinked, to the great detriment of the patient.

It would be necessary, M. Poulet thinks, to include ordinary phosphorus among the poisonous substances the sale of which is prohibited, and to replace with amorphous phosphorus that which serves for the fabrication of matches.

* Communicated to the Académie des Sciences, Paris.

Art. 76.—*Poisoning by Vanilla.*

(*Boston Medical and Surgical Journal*, August 1.)

A correspondent, in speaking of cases of poisoning by vanilla flavouring, stated that in his own family evident and violent poisoning from a similar cause recently took place. Five members of the family were affected, all of whom had partaken of custard flavoured with vanilla, and two who had not eaten escaped. The symptoms were severe diarrhœa with violent pain in the lower abdomen, without much gastric disturbance.

Art. 77.—*On the Use of Bromide of Potassium in the Bite of Rattlesnake.*

By E. A. Anderson, M.D.

(*American Journal of the Medical Sciences.*)

Dr. Anderson gives the details of two cases in which the above treatment was successfully employed. Large doses of alcohol were administered at the same time. The first case occurred in 1867, the patient being a young lady who was bitten in the hand while picking some violets. The pain was excruciating, and the local and general symptoms were of the most dangerous character. Whisky was given in large doses every fifteen minutes, and fifteen grains of bromide of potassium every hour. At the end of four hours relief was obtained, as was shown by the returning warmth of the surface of the body, the diminution of pain, and sleep. The patient eventually recovered, although the bitten part sloughed away. Dr. Anderson remarks that many cases of rattlesnake bite recover under the exclusive use of alcohol, but many die in spite of its employment. He attributes the successful result of the case recorded in great measure to the bromide, which allayed pain, produced sleep, and seemed to cut short the dangerous symptoms, and he is satisfied that death would have ensued if stimulants only had been employed. The other case was that of a young negro, and occurred in 1870. The man was bitten by an enormous rattlesnake in the knee. The symptoms were similar to those recorded in the first case, and were so severe that the patient appeared moribund. Brandy was poured down his throat, however, at regular and short intervals, and, as soon as he was able to swallow, twenty grains of bromide of potassium were given every hour until he had taken 240 grains. Recovery was gradual but complete.

Art. 78.—*Two Cases of Poisoning by Leaves of the Privet.**

By J. Daniel Moore, M.D., F.L.S., Lancaster.

(*British Medical Journal*, August 24.)

"The common privet of our gardens (*Ligustrum vulgare*) has long been considered as a vegetable poison, and a few instances are upon

* Read before the Public Medicine Section at the Annual Meeting of the British Medical Association in Birmingham, August, 1872.

record in which children have died from eating the berries of the plant; but the occurrence of poisoning by the leaves or young shoots of the plant has never as yet been recorded. During the last few weeks, in the month of April, two cases of this character have been under my care, of which the following are the principal symptoms.

"The father of a child aged about nine years requested me to see his little boy, whom he described as being feverish and drowsy. The child seemed to lose himself; did not answer questions put to him without much persuasion, and then evidently with great difficulty. On going to bed the child tried to say his prayers, but after the first sentence or two stopped short, as if he were drowsy or had forgotten them, and on being roused commenced again, but with the same result. The father then noticed some twitching of the hands and arms, and deemed it necessary to have immediate medical advice.

"When I saw the patient first, he was in bed; he had been much purged, the evacuations being of a greenish colour; he was semicomatose, seemed to be quite unable to speak, and was with difficulty made to understand that he was required to put out his tongue. The temperature of the head and body was above the normal, and in a short time there was a cold perspiration. There were convulsive movements, at first noticed particularly on the right side; the hands were clenched and the feet drawn up; the pulse quick and small, the respiration somewhat hurried. There was some tenderness of the abdomen upon pressure. These symptoms increased in severity during several hours and the purging continued, accompanied with severe vomiting; the vomited matter evidently containing small particles of green leaves, the fragments being too small to afford any idea of the plants from which they had been taken. The convulsions became more general and severe; the head was frequently thrown back during the convulsions, in a condition somewhat resembling slight opisthotonos.

"A second child about six years of age was seized with purging in the course of a few hours, and presented similar symptoms in every respect. Both of them recovered slowly from the effects of the toxic agent. There was for some time much loss of power, especially of the lower extremities; one of the children, on attempting to walk, making use of the expression, 'that his legs would not do as he wanted them.' On their complete recovery the elder child went with me into the garden, and pointed out the plant from which he said they had plucked and eaten the leaves and young shoots, thus clearly identifying the poison as being that of the common privet."

Art. 79.—*On a Rare Mode of Death in Infants.*

By T. Janeway, M.D.

(*New York Medical Record*, July 1.)

At a recent meeting of the New York Pathological Society Dr. Janeway exhibited an interesting specimen. The infant died two days after birth. The mother had a very protracted labour, the first stage being twenty-six and a half hours. The child did well for the first twenty-

four hours, when it grew pale, passed no urine, and in the course of the day died. At the necropsy the peritoneal cavity contained eight ounces of thick black fluid blood, which had its source in a detachment of the peritoneum from the upper part of the right lobe of the liver. The area of detachment was two inches square. All the other organs were normal. The kidneys contained urates in the tubes. This was the third specimen of the kind Dr. Janeway had seen, and, as far as he recollected, in both of the others the labour was protracted. This was the only one, however, in which the effusion was upon the upper lobe of the organ.

Art. 80.—*On Strychnine and Chloral.**

By M. Oré.

(*Gazette Hebdomadaire*, No. 31, 1872.)

1. Not only does an intravenous injection of one milligramme of strychnine (a fatal dose for a rabbit of two kilogrammes) fail to prevent the animal, when placed under the poisonous influence of four grammes of chloral, from succumbing, but the presence of the alkaloid is not manifested by any characteristic spontaneous phenomena.

2. The *intravenous* injection of two and a half milligrammes of strychnine occasions well-marked spontaneous convulsions. In one experiment, although it did not prevent death, it seemed to retard it. The animal died with all the symptoms of poisoning by chloral.

3. In proportion as the dose of strychnine is increased death occurs with greater rapidity, and the poisonous action of the substance becomes more marked.

4. If the dose be increased to beyond seven and a half milligrammes, the action of the chloral is then *completely effaced*, and the animal dies from strychnine. *The antidote thus becomes a poisonous agent.*

5. Whenever one attempts to oppose the effects produced by chloral administered in a fatal dose by means of strychnine, introduced either hypodermically or into a vein, the animal always succumbs, most frequently in consequence of the action of the former agent, sometimes from the latter agent.

6. Strychnine, then, is not an antidote to chloral.

Art. 81.—*Belladonna as an Antagonist of Opium.*

By Hasford Walker, M.D.

(*American Journal of the Medical Sciences*, January.)

Dr. Walker reports a case the treatment of which favours the practice of employing belladonna as an antidote for opium, after poisoning by the last-named narcotic. On the night of July 24th, 1871, he was called to see a patient who had swallowed, inadvertently, a large quantity of a

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* Communicated to the Académie des Sciences, Paris.

concentrated tincture of opium, the dose taken being considered equivalent to about six or eight grains of opium powder. Dr. Walker found his patient, a girl of fifteen years of age, completely comatose, and on opening her eyelids and placing his fingers on the conjunctiva there was no sensibility whatever evinced. The pupils were very much contracted; the respiration was stertorous and difficult; the pulse was full, slow, and labouring; a dark suffusion was exhibited on the countenance, and there was almost a total absence of sensibility to external impressions.

Without delay Dr. Walker, with some difficulty, on account of the almost paralysed condition of the muscles of deglutition, administered emetics of mustard and ipecacuanha, followed by copious draughts of warm water; he also tickled the fauces with a feather, and thus endeavoured to produce vomiting. In this endeavour he failed, and, not having a stomach-pump, he had recourse to the hypodermic injection of belladonna. He thus administered one grain and a half of the alcoholic extract of belladonna, and with an effect which he says was "magical." The pupils, from a state of extreme contraction, became dilated, and copious emesis followed in a few minutes.

As soon as the contents of the stomach were evacuated, the patient being much more prostrated, strong coffee and stimulants were administered, both hypodermically and by the mouth, and in the short space of ten hours from the exhibition of the poison the patient had sufficiently recovered to recognise and speak to those about her. She suffered no inconvenience as a result of this treatment, except a slight degree of inflammation for a day or two from the punctures made by the hypodermic syringe, and which readily yielded to the treatment by cold applications.

Art. 82.—*Belladonna in Opium Poisoning.*

By R. D. Bone, M.D.

(*Nashville Journal of Medicine and Surgery*, August; and *The Medical Record*, September 16.)

A case of resuscitation from opium poisoning by enemas of solution of belladonna, until ten grains were given, is mentioned by Dr. R. D. Bone, of Larissa, Texas. The patient was a child aged seven months, who through mistake of the mother, took two grains of morphia solution. When first seen it was in a state of profound coma, complete anæsthesia, livid and cold surface, pupils contracted to a mere point, no perceivable circulation in extremities, breathing stertorous, and from two to four respirations per minute. In two hours afterwards the child cried, and entire recovery followed. Although the *certainty* of the antidotal effects of belladonna in opium poisoning may be questioned, he is confident, in this case, it was the medium through which the effects of the morphia were displaced, and the life of the child saved.

The subsidence of such a profound condition upon the appearance of the therapeutical action of the belladonna would hardly fail to convince the most doubtful as to its potency in like cases, and justify the repetition of the practice.

Dr. N. G. M. Walker, of Texas, relates a case where tincture of opium was taken for suicidal purpose, in which belladonna thrown into the stomach had the happiest effect.

Art. 83.—*On the Antagonism between the Actions of Physostigma and Atropia.*

By Thomas Fraser, M.D.

(*Transactions of the Royal Society of Edinburgh*, vol. xxvi. 1872 ; and *British and Foreign Medico-Chirurgical Review*, July.)

The question of the antagonism of action between two active poisonous substances is well brought out in a report to the Royal Society of Edinburgh by Dr. Thomas Fraser. He opens his work by a historical notice of the various instances of antagonism that have been suggested by different experimentalists, and he concludes this part by the hope that the description of the research forming the subject of his present communication will render it obvious that the reality of a lethal antagonism may be readily and certainly established by experiment.

The physostigma used in the researches by Dr. Fraser was administered either in the form of an alcoholic extract or of the sulphate of the active principle. The atropia was administered in the form of sulphate. With a few exceptions, when dogs were used, the animals operated on were rabbits. The animals were invariably in a state of perfect health and in full digestion.

The rabbits used were about three pounds in weight, and the plan adopted for the administration was as follows. In the first place the minimum fatal dose for rabbits of the extract of physostigma and of the sulphate of physostigma employed was determined by a number of preliminary experiments, so that on the weight of the animal being ascertained it was an easy matter to be certain of the dose that killed it. Then in those experiments in which the recovery followed the administration of a dose of atropia given in combination with a dose of physostigma equal to or in excess of the minimum fatal dose, the animal used was killed many days afterwards, and when the effects of the two substances had completely disappeared, by a dose of physostigma less than or only equal to that from which it had previously recovered. *Therefore when the administration of atropia prevented an otherwise fatal dose of physostigma from causing death, a perfect demonstration was obtained of the power of atropia to produce some physiological action or actions that counteracted some otherwise lethal action or actions of physostigma.*

The administration of the substances was effected by subcutaneous injection, by which method the existence of a lethal antagonism was subjected to a more severe test than if the substances had been introduced into the stomach.

From these preliminary statements Dr. Fraser passes to describe his various and laborious experiments. It is shown that the minimum lethal dose for rabbits of extract of physostigma is 1·2 grain, and that of

sulphate of physostigma is 0·12 grain for every three pounds weight of the animal.

It is shown by a direct inquiry as to the limits of antagonism when atropia is administered five minutes before physostigma, that while one two hundredth of a grain of sulphate of atropia is a dose insufficient to prevent death, nine one thousandths of a grain is a dose sufficiently large to do so; that any dose of sulphate of atropia ranging within the wide limits extending from the nine one thousandths of a grain to five grains and one fifth is able to prevent the effect of this dose of physostigma; and that if the dose of sulphate of atropia amount to five grains and three tenths the region of successful antagonism is left and death occurs.

From another series of experiments it is shown that while three two hundredths of a grain of sulphate of atropia is a dose too small to prevent the occurrence of death after a dose of physostigma one and a half times as large as the minimum lethal dose, one fiftieth of a grain is a dose sufficiently large to do so; that doses of sulphate of atropia ranging from one fiftieth of a grain to four grains and one tenth are able successfully to counteract this dose of physostigma; and that death occurs when the dose of sulphate of atropia is so large as four grains and three tenths.

At the close of his paper the author contends that the conditions of the experiments and the symptoms that were observed render it certain that atropia prevents the fatal effect of a lethal dose of physostigma by so influencing the functions of certain structures as to prevent such modifications from being produced in them by physostigma as would result in death. The one substance counteracts the action of the other, and the result is a physiological antagonism so remarkable and decided that the fatal result even of three and a half times the minimum lethal dose of physostigma may be prevented by atropia. Whether the same results would occur in the human subject is left open by Dr. Fraser for experience, as distinct from experiment, to decide.

Art. 84.—*Physiological Antagonism between Atropia and Morphia.*

By J. Magee Finny, M.B., Dublin.

(*Dublin Journal of Medical Science*, July.)

At a meeting of the College of Physicians of Dublin Dr. Finny related a case of a young woman, aged twenty-five, who suffered from neuralgia of the face. Dr. Finny had found that she received much benefit from the subcutaneous injection of one quarter of a grain of morphia, and one fiftieth of a grain of sulphate of atropine at bedtime. He therefore again went with the view of injecting the mixture, but noticing some fungoid bodies in the atropine solution, and thinking it was in consequence partially decomposed and weaker, he injected double the amount of the atropine solution. In the course of twenty minutes he was called to her and found her cold and trembling, in a state of alarm, with a dry parched tongue and throat, great thirst, though she was hardly able to swallow drinks, with thick inarticulate

speech, dilated pupils, and consequent impaired vision. Pulse 130, respiration 32 and very shallow. The symptoms rapidly became more serious, noisy delirium supervening, when Dr. Finny remembered it as a physiological antidote to atropine, and he forthwith injected one third of a grain of the acetate of morphia. In five minutes the good effects of the latter were observable, the restlessness and jactitation ceasing, the pulse coming down, and the skin becoming warmer. In a few minutes the patient was asleep, and on the following morning was free from neuralgia and capable of eating a hearty breakfast.

Art. 85.—*Excessive Atrophy of the Ribs of a Lunatic.*

By Professor Ludwig Meyer, of Göttingen.

(*Virchow's Archiv*, lii. 3; *Schmidt's Jahrbücher*, No. 4, 1872.)

This abnormal state of things was met with in an imbecile woman, aged fifty-six years, who died in the Göttingen *Irrenanstalt*, from suppuration in the kidneys. Professor Meyer gives the following description of these bones:—

"The ribs seemed to have been much reduced both in breadth and thickness, and in some parts the osseous structure was as thin and small as the blade of a knife. A slight attempt to bend any of the bones caused fracture. Under firm digital pressure the ribs broke like fragile pasteboard, with straight lines of fracture and without splitting. The broken bone presented no infraction, but, as soon as the pressure which had caused the fracture was removed, returned to its former position with an elastic spring, although previously it seemed to have been neither soft nor elastic, but, on the other hand, broke down with crepitation under the finger-nail. The ribs were extremely light in weight, and their surfaces were striped and very rich in vessels; the compact substance formed a transparent shell as thin as paper, and the spongy substance consisted of a few cross-fibres, the meshes of which were filled with a thin greasy and brownish red fluid. Transverse sections of the thin cortical substance, when cleared up by hydrochloric acid and placed under the microscope, seemed to be normal; the bone corpuscles presented their ordinary appearance and were numerous; the Haversian canals were wide and irregular, and lined by a streaky thick membrane, studded with drops of fat and granular corpuscles. The thinly fluid marrow contained blood corpuscles and drops of fat."

The other bones in this body were all normal or almost normal. Professor Meyer is disposed to attribute this isolated morbid change of the ribs to the extremely slight respiration which is observed in many lunatics. In this case no ribs had been broken during life.

Art. 86.—*Poisonous Effects of Animalculæ.*

By J. P. Brown, M.D., Ontario.

(*Canada Lancet*, August, 1852.)

Dr. Brown reports several severe cases of poisoning produced by drinking freshly churned buttermilk, which, on microscopical examina-

tion, exhibited large numbers of animalculæ. The conclusions which he draws are: 1. That in addition to the chemical tests used, the long interval which elapsed between the imbibition of the milk and the commencement of the symptoms would preclude the possibility of ordinary irritant poisoning. 2. The presence of animalculæ would preclude the same; as the existence of poisonous matters in the milk would, in all probability, prove fatal to insect life. 3. That the animalculæ were the real evil, and that he is of the impression that the germs or ovula which produced them were in the water drunk by the cow which produced the milk. The animalculæ were from 1-5000th to 1-7000th of an inch in diameter. Remembering the immeasurable difference in the size which always exists between the germ or ovum and the fully developed living being, he thinks it is quite possible for the germ of the animalcula to be so small as to pass without obstruction through the lacteal and lactiferous absorbent systems; and that, too, without breaking any well-established physiological law.

Art. 87.—*Five Cases of Poisoning occurring in Private Practice.*

By John Dougall, M.D.

(*Glasgow Medical Journal*, February.)

These five cases are all of singular interest. In the first case, a girl two and a half years old swallowed about a tablespoonful of Adam's patent composition for cleaning furniture—a neutral saponaceous creamy substance, smelling strongly of ammonia and turpentine. After serious symptoms of depression there was recovery. In the second case, a boy of two years old took into his mouth a drachm of fuming nitric acid. He spat out at once, and recovered from the local symptoms that were set up. In the third case, a boy aged five years recovered from a drachm dose of oxalic acid; lime water, magnesia, and warm weak toddy were administered, and recovery was complete in twenty-four hours. In the fourth case, one of poisoning by opium, tartar emetic injected into a vein failed to produce vomiting. Death occurred. The last was a unique case, "resembling hæmorrhagic variola," induced by eating decayed plums. The patient recovered after a long illness.

Art. 88.—*Report of a Case of Poisoning by Cantharides.*

By L. B. Kline, M.D.

(*Medical and Surgical Reporter*, July 20; and *The Medical Record*, September 16.)

Dr. Kline relates a case of poisoning by upwards of fifty grains of this remedy. When first seen the patient, female, had already been relieved by emesis. With the object of neutralizing whatever of the cantharides might remain in the stomach he administered charcoal,

and also ordered the following: ℞. Tr. opii, Tr. camphor., Buchu ext. fl., Spir. æth. nit., āā fʒss. M. S. One teaspoonful to be taken for a dose.

A few powders of morphia were also used in connection. The symptoms were soon relieved, and in the course of a few hours she was comparatively recovered. A noticeable feature in the effects of the cantharides was its action upon the pulse, causing it to fall to about fifty per minute.

SECT. IV.—THERAPEUTICS.

ART. 89.—*On Conia and its Use in Subcutaneous Injection.*

By J. WILKIE BURMAN, M.D., Assistant Medical Officer, West Riding Asylum.

(*West Riding Lunatic Asylum Medical Reports*, vol. ii.)

Doctor Burman, who is known to have performed numerous experiments with this drug on man and the lower animals, comes to the following conclusions with regard to the action of conia and its uses:—

1. Conia is too powerful and too irritant to be administered internally alone; but when neutralized with acid and in bland solution there is no reason why it should not be used internally in suitable doses, and thus produce well-marked cicutism without any topical irritation.

2. Pure conia may be injected under the skin in large quantities without leading to any result except the formation of an abscess, or the production of considerable local irritation at the site of injection.

3. Conia, neutralized with acetic or hydrochloric acid and dissolved in spirit and water, acts very rapidly and powerfully, when subcutaneously injected, in pigeons, pigs, guinea-pigs, rabbits, dogs, and cats, and when thus used, in doses of from ♏ss to ♏ij, in the healthy human subject it produces well-marked cicutism.

4. Thus administered it may be used therapeutically, in doses of ♏ss to ♏iij, in cases of *mania*, with the result of subduing motor excitement, warding off emaciation and exhaustion, and promoting recovery. The strongest conia may be thus administered, commencing with doses of ♏ $\frac{1}{10}$th and gradually increasing, in proportion to the motor activity of the patient, until decided physiological effects are produced.

5. When thus administered the use of conia does not lead to any disturbance of the digestive functions, interference with the circulation, or any considerable local irritation.

6. The most suitable cases for treatment by the hypodermic injection of conia, neutralized and in solution, are those of *acute mania*, where the brain lesion is not *organic* and where medicine, if given by the mouth, would require to be administered with the stomach-pump.

7. Conia acting upon the purely motor centres in a sedative manner, and morphia acting in a similar way on the sensori-motor and ideo-motor centres, it follows as a fair corollary that the combination of the two in subcutaneous injection should lead to effects directly antagonistic to the condition of maniacal excitement; and such being, in fact,

the case, they may be thus used together with very great success in the treatment of cases of mania.

8. Conia might be very useful, as a subcutaneous injection, in cases of poisoning by strychnia, as well as in tetanus, hydrophobia, and other spasmodic diseases.

9. Specimens of conia, as obtained from *different* sources, vary very considerably in appearance and strength, and they may be rendered dangerous or unfit for use in the human subject on account of impurity. Too much caution cannot, therefore, be observed in the first use of a new specimen until its strength is ascertained.

10. Conia as obtained from chemists in England and Scotland is manufactured, for the most part, abroad. The best and purest conia is prepared from the *seeds* of the *uncultivated* plant, and in order to avoid variability, all supplies of it should be drawn from some *one* good manufacturer, with directions that it should be so prepared.

11. An increase in the demand for conia is all the stimulus that is required to lead to the production of a crystallizable salt of it of stable and uniform strength, and sufficiently soluble in water for the purposes of subcutaneous injection.

12. ♏ss of the best conia (costing ¼d.) subcutaneously injected, neutralized and in solution, is equivalent in action to about ʒj of the best succus conii (costing 2d.) administered by the mouth.

Art. 90.—*On the Injection of Ergotin in the Treatment of Aneurism and Varix.*

By Dr. Dutoit.

(*Schmidt's Jahrbücher*, No. 6, 1872.)

Dr. Dutoit reports a case of aneurism of the subclavian artery cured by subcutaneous injections of ergotin and digital compressions (Archiv, f. 1, Clin. Chir. xiii. 3, 1871). Here the digital compression was rendered possible by the use of subcutaneous injections of ergotin, as recommended by Professor von Langenbeck.

"The patient, a man aged forty years, in attempting to save his face in a fall, injured his left arm, which was forcibly extended; about five months afterwards a tumour formed under the left clavicle, which pulsated and caused severe brachial neuralgia. When Dr. Dutoit first saw the patient he found on the outer side of the left sterno-clavicular joint, and projecting above and below the left collar-bone, a violently pulsating tumour of the size of an ostrich's egg. The collar-bone was arched forwards to a considerable extent. The supra-clavicular hollow and likewise the left side of the neck and face were œdematous. On auscultation both cardiac sounds could be distinctly heard over the tumour, and the second sound was accompanied by a bruit."

That this was an aneurism seemed to be indisputable. From the report as to the cause of the lesion, the long duration and the simultaneous protrusion above and below the collar-bone, Dr. Dutoit concluded that the case was one of spurious circumscribed aneurism. Deligation after Hunter's method was impossible, and after Brasdor's method

extremely unsafe; and digital compression was not applicable, as the first rib was covered by the tumour. Dr. Dutoit first treated the patient by injecting Langenbeck's solution of ergotin, gradually increasing the daily dose from 3 to 18 centigrammes. The injection was first made every second day, and afterwards every third day. After the fourth injection Dr. Dutoit made out a decrease in the size of the tumour; and from this time there was diminution of the tumour and reduction of the pulsation after every injection. No abscess formed at the seat of the injection, but indurated tubercles, which Dr. Dutoit regarded as advantageous, since these set up considerable resistance to the impulse of blood. During this treatment some of the varicose veins of the neck became atrophied.

"When the dose of ergotin had reached 12 centigrammes the patient experienced pricking sensations in the limbs, which lasted from a half to one hour. After a fruitless attempt with Luer's compressing apparatus, Dr. Dutoit was able, on the forty-second day from the commencement of the treatment, to apply digital compression. After the tumour had been compressed six hours daily for six and a half days the pulsations over the whole circumference of the tumour had ceased, and a strong impulse could be felt only on applying the finger in a direction from below upwards. Ten injections were afterwards made, each containing 18 centigrammes of ergotin, and a firm pad of caoutchouc was then fixed over the artery at the part where the compression had been made. This pad was used during two months, the patient wearing it for eight successive days and then leaving it off on the following eight days. When Dr. Dutoit saw the patient nine months after the commencement of the treatment there was no difference in appearance between the left and the right supra-clavicular fossa; the infra-clavicular fossa on the left side was swollen and filled with thick firm tissue, which presented no signs of pulsation. There were no longer any subjective symptoms."

Dr. Paul Voigt, of Griefswalde (Berl. klin. Wochnschr. ix., 10, 1872) recommends the treatment of varices by subcutaneous injections of ergotin. On a man aged sixty years, affected with extensive varices of the right leg, subcutaneous injections were made of a solution of 2 grammes of extract of ergot in 7·5 grammes of spirits of wine and the same quantity of glycerine. Twelve centigrammes of the extract were injected every second day at two spots. At the end of eight days the varix was no longer to be seen, and there was no return of it at the end of six weeks, during which time the patient had been walking about. A second case of varix on the calf of the size of a hazel-nut disappeared after a single injection.

By the results of Dr. Voigt's treatment in these cases Professor Landois and Dr. Potel were led to make microscopical sphygmographical investigations into the action of ergotin on the muscular structures of arteries and other vessels. Ergotin first causes contraction of the arterial muscular tissues, consequently less blood is carried to the veins and the rapidity of the current is increased. The contraction of the muscular tissue of the veins is thus excited, although in old varices this contraction may be very slight. Probably direct compression of the veins may be set up by the infiltration. Swelling was produced as a result of the injection.

The many trials made on varices of the leg and on varicocele, hæmorrhoids, and angiomata have had a good result.

By experiments on rabbits it has been shown that ergotin, when injected subcutaneously, causes contraction of the muscular tissue of vessels through the action of the vaso-motor centres. Ergotin acts more energetically at the region of injection than at other parts of the body, an analogous instance to that of the local action of morphia when injected subcutaneously.

Art. 91.—*Hypodermic Injections.*

By M. Adrian.

(*Bulletin Thérapeutique* and *Pharmaceutical Journal*, July 6.)

In the preparation of a solution for hypodermic injection the choice between the normal alkaloid and its salts is not an indifferent one. When medicaments so powerfully active are injected under the skin, it appears necessary to define clearly the relation that exists between the alkaloid itself and its combinations with acids. In medical practice sufficient importance is not always attached to this distinction; and instances are sometimes met with where the same doses of hydrochlorate, sulphate and acetate of morphia, or of hydrochlorate and sulphate of strychnia, are prescribed, although the constitution of these various salts assigns to them a sensibly different proportion of the active principle that is employed. This will be seen by an examination of the following numbers:—

One gramme of	Crystallized Alkaloid.		Water necessary for Solution.
Hydrochlorate of morphia contains	0·80	...	20
Sulphate of morphia	0·76	...	10
Acetate of morphia	0·86	...	5
Sulphate of strychnia	0·75	...	10
Hydrochlorate of strychnia . . .	0·83	...	8

According to this table, one gramme of acetate of morphia contains ten centigrammes more of morphia than the same weight of the sulphate, and a similar difference exists between the hydrochlorate and sulphate of strychnia.

Of course it is because of their greater solubility in water that the preference is given to the saline combinations over the alkaloids. But the preparation of these solutions is not so easy as at first sight might appear, and certain difficulties are met with in the operation which might possibly lead to a notable error in the final result, and so modify consequently the composition of the medicament. Thus in operating with the salts of morphia, it is found that their solubility is variable, and it is necessary sometimes to have recourse to elevation of temperature, or the addition of a fresh quantity of acid, to obtain a solution. This difference may arise from an impurity in the salt, or more frequently from the greater or less amount of dehydration it has undergone in its preparation. On the other hand, it is rarely that the solution is sufficiently clear, and it becomes necessary to filter it through paper. But

what then happens? The filter absorbs a portion of the liquid; and although the precaution may be taken of well washing the filter, there is no proof that the whole of the active principle is carried off in the washing, so that in pouring 10 grammes of distilled water containing 30 centigrammes of hydrochlorate of morphia upon a filter weighing 50 centigrammes, only 8·20 grammes of the solution is recovered, being a loss of 1·80 gramme, or nearly one-fifth.*

Solutions intended for hypodermic injection, prepared as they usually are, present another defect—namely, the alteration which they undergo after a time. Small fungi are seen to form upon the surface; then the liquid becomes turbid and gives rise to a copious deposit. The experiments which the author has made with the object of avoiding this alteration, have led to the following results.

The solutions of atropia and codeia are decomposed more readily than the others. Also, when they are prepared in the cold they change more rapidly than when they are obtained with boiling distilled water. Liquids containing the alkaloids dissolved with the help of sulphuric acid are preserved better than those in which hydrochloric acid is used. Finally, solutions containing glycerine to the extent of one-fifth of the total volume may be kept for a long time without undergoing the least alteration.

Based upon these observations, the author has been led to consider the following conditions to be desirable in the preparation of solutions for hypodermic injections:—

1. To use exclusively alkaloids of vegetable origin in a state of purity. These are always well defined, stable and uniform in composition, whilst their salts vary according to the equivalent of the acid which is used in their formation, and according also as they contain more or less water of crystallization.

2. To use as a vehicle boiled distilled water, containing twenty per cent. of glycerine.

3. To give the preference to sulphuric acid, diluted in the proportion of one of acid to ten of water, above all other acids.

4. To substitute measurement by volume for measurement by weight.

Art. 92.—*Case of Excessive Hypodermic Use of Morphia.*

By Judson B. Andrews, M.D., Assistant Physician to the New York State Lunatic Asylum, Utica.

(*Am. Journ. Insanity*, July, 1872.)

Dr. Andrews mentions the case of a woman, aged thirty years, who had passed into an acutely maniacal condition, and exhibited scars and ecchymosed spots, covering nearly the whole of the body, which could be reached by her own hand. When convalescent she asserted that

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* In a memoir upon which the author is engaged, he proposes to indicate the change of composition to such a liquid through the absorption in the filter.

she had employed the hypodermic injections for three and one half years, once, and much of the time twice a day, making in all about two thousand injections; that during the last few months of its continuance she had used a drachm and one half of morphia per week; that she inserted the needle perpendicularly to the surface, and often carried its full length into the tissues. About four months before death the patient, in rubbing her hand over the breast, discovered an elevated point just under the skin, which on pressure gave a pricking sensation. This was cut down upon and a broken needle extracted. From this time from one to twelve needles were removed daily from various parts of the body; from the left breast, the abdominal parietes, the mons Veneris, the labia and vagina, the thighs, from the leg down to the ankle, from the buttocks, from about the anus, from the back as high up as between the shoulders. Two hundred and eighty-six needles were taken from the body during life; 11 were found in the tissues after death; 3 were passed from the rectum during sickness; making a total of 300 needles and pieces. Of this number 246 were whole, and 54 were parts of needles. As regards position in the body, they were distributed about as follows: In right breast, 150; left breast, 20; abdomen, 60; genitals, 20; thighs and legs, 30; back 20.

It was supposed that they were introduced through the skin while she was under the influence of morphia hypodermically administered, and while suffering from hysteria. That some were found in positions where they could not have been inserted by the patient can be accounted for by their movements in the tissues, which were observed so often during the life of the patient. Her mother could throw no light on the subject, but recalled the circumstance that the patient purchased at one time ten papers of needles, and could account for only two of them. They were not obtained or introduced while in the asylum.

Art. 93.—*Researches on the Action of the Bases and Alkaloids derived from Opium.**

By M. Bouchut.

(*Gazette Médicale de Paris*, No. 21, 1872.)

Conclusions.—From the whole of the facts observed in infants between the ages of three and thirteen years, and in some few subjects more advanced in age, it results:—

1. That the alkaloids derived from opium, when administered by the stomach or by the cellular tissue, may be divided into two groups, one comprising the alkaloids endowed with soporific properties, the other the alkaloids that are inert.

2. That the alkaloids of the first group differ in the energy of their action.

3. That none of these produce any convulsions, even in the strongest doses in which it is possible to administer them.

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* Communicated to the Académie des Sciences, Paris.

4. That the best soporifics are those alkaloids which are poisonous when employed in doses that are too considerable.

5. That morphia and the salts of morphia are the most active preparations of opium.

6. That in its soporific and anæsthetic properties codeia comes next to morphia.

7. That it is necessary to use three times more codeia than morphia in order to obtain similar soporific and anæsthetic effects.

8. That narceia comes after morphia and codeia with regard to its soporific properties; and that this alkaloid, if it be pure, may be absorbed in considerable doses without producing any appreciable effect.

9. That papaverin, when injected into the cellular tissue in doses of 10 centigrammes and into the stomach in doses of 1 gramme, has no action.

10. That narcotine in doses of 50 centigrammes has no narcotic nor anæsthetic effect.

11. That thebain in doses of 50 centigrammes is absolutely inert.

12. That meconine in doses of 30 and 50 centigrammes produces no appreciable effect.

13. That opianic acid is an inert substance.

14. That in practical medicine opium, in the first place, and then morphia and codeia alone are of use to patients.

15. Finally, that the difference in the results obtained by observers on the properties of the alkaloids and the bases of opium, depends on the condition of the purity or impurity of the substances submitted to experiment.

Art. 94.—*On the Employment of Veratrin in Cardio-Vascular Affections that have not attained the Period of Cachexia.*

By M. Bitot.

(*Gazette Hebdomadaire*, No. 37, 1872.)

The following conclusions are given at the end of a communication read at a meeting of the French Association for the Advancement of Science, September 9th, 1872:—

1. Veratrin is a valuable agent in the treatment of cardio-vascular disturbances.

2. It is especially useful in the treatment of disturbances that accompany functional hypertrophy of the heart.

3. In contrast to digitalis it in physiological doses acts on the heart as an atonic and hyposthenic agent

4. In physiological doses it is not, like digitalis, an exhausting agent. The persistence of its employment is not attended with the same dangers.

5. It seems to play the part of an indirectly compensating agent. By intensifying the sensibility and the contractility of animal life it reduces the morbid activity of the nervous system and of the contractile fibres of the vegetative life.

6. Its action is very distinct from that of digitalis; when, therefore, the latter agent becomes powerless one might have recourse to veratrin.

7. As with digitalis veratrin is contra-indicated in the ultimate stage of cardio-vascular affections in asystole.

Art. 95.—*Veratrum.*

By E. Peugnet, M.D.

(*New York Medical Journal*, May.)

At a meeting of the Medical Society of the County of New York Dr. E. Peugnet read portions of a long and elaborate paper, entitled "A Contribution to the Knowledge of the Chemistry and of the Physiological, Therapeutical, and Toxical Actions of Veratrum Album, Veratrum Viride, and their Alkaloids." Besides reviewing the work of previous investigators, the speaker detailed upwards of fifty experiments of his own, and ended with the following summary of conclusions drawn from them :—

"1. They confirm the views of Richardson and Scattergood as to the identity of the veratroida in both [veratrum album and veratrum viride].

"2. They confirm the views of Bullock as to the veratroida's being distinct from the veratria (sabadilla).

"3. They confirm the existence of Simon's jervina in veratrum album, and of Bullock's viridia in veratrum viride, and further tend to establish the chemical and physiological identity of both.

"4. They establish that Simon was probably mistaken as to the existence of baratyna in veratrum album; for in exhausting the root a large amount of lime is extracted by the the acetic or phosphoric acids, and held in solution in the form of acetate or phosphate, and the addition of sulphuric acid will precipitate it in the form of sulphate, which is insoluble: in case the sulphates are used to precipitate the lime, the acetates or phosphates of ammonia, magnesia, potassa, or soda are formed and held in solution.

"5. The veratroida is the active sedative principle of veratrum viride, and Bullock and Wood were mistaken in asserting that it was the viridia.

"6. The combination of the two alkaloids, as they exist in their natural state or artificially combined, is the most reliable and decided method of obtaining the therapeutical virtue of either veratrum album or viride, as shown by the experiments of Scattergood, Percy, and Oulmont, with the resinoid of veratrum viride, also Bullock's and Wood's with the combined alkaloids, and confirmed by my own.

"7. The essential and characteristic difference between the varieties of veratum resides in the resinoid of veratrum album, and the characteristic action of that plant on the alimentary canal is due to it.

"8. In order to obtain the most active root, great care should be taken in selecting it; the time of gathering it is essential in both, for in extracting the alkaloids from two pounds of powdered veratrum album, purchased from a German importer, I obtained but two grains of veratroida, not a trace of jervina, an abundance of earthy salts, and a resin almost inert. I did not find two specimens out of five to yield the same result; this accounts for the discrepancy between the views of such high authorities as Pereira, Christison, and others, and mine, as to the constant effect of veratrum album; for I maintain that if it has been

collected at the proper season and has not deteriorated by keeping, and if it is either given in substance or its active principles are administered, it will invariably cause vomiting, purging, great prostration, and gastro-intestinal hyperæmia; in many cases gastro-enteritis will ensue as a secondary result. These effects, of course, vary with the amount taken.

"In case the tincture of veratrum viride or its fluid extract is preferred the rootlets should be separated, as they probably contain less of the alkaloids. As the tincture or fluid extract of veratrum album would contain the veratrine or resinoid, the obnoxious principle, it would be necessary to extract the alkaloids and make use of them.

"9. In cases where alarming symptoms manifest themselves, the basis of the treatment should consist of stimulants, rubefacients, and opiates. In poisoning by veratrum album, the gastro-intestinal hyperæmia should be early overcome by the tincture of cantharides, as suggested by Percy in reference to the dilatation of the capillaries, by general and local electrization, and by the early use of warm enemas to wash away the effused blood and mucus.

"10. The presence of the alkaloids can be detected in the urine.

"11. The ethereal extract of the resin of veratrum album has a remarkable anæsthetic power."

Art. 96.—*A Hæmorrhoidal Suppository.*

By Henry M. F. Newton, M.D.

(*Journal of the Gynæcological Society.*)

Dr. Newton recommends this formula for a suppository in hæmorrhoidal cases: ℞ Acid. tannic., gr. v; ext. belladon., gr. ssj; butyr. cacao. q. s.

Art. 97.—*The Glue Bandage in Fractures.*

By E. D. Worthington, M.D., of Sherbrooke, Canada.

(*Canada Medical Journal.*)

The author, in referring to the article on "The Glue Bandage as a Primary Setting for Fractured Limbs," published in the December number of that journal, by Geo. Ross, M.D., House Surgeon to the Montreal General Hospital, states that he has used the glue bandage frequently and successfully since 1867, in fractures and in other surgical cases. In a case of fracture of the leg, with a certain amount of swelling, and where it is necessary to put it up for a few days in the usual manner, with a roller or in a box-splint, or on an inclined plane, the course he has always adopted in applying the glue bandage is as follows: Dissolve a certain quantity of No. 1 white English glue to the consistence of drained honey. Get a small-sized paint brush, half or three-quarter inch diameter, and a smooth board, two or three feet in length,

on which to give the paper—already cut to the requisite lengths—a coating of glue. Now split the roller that is already on the leg down the middle, open the ends out, give the leg a good coating of glue, brushing under both sides as far as possible, and readjust the cut ends of the roller as you would an ordinary tailed bandage. With a little pains the whole leg may be glued, except at the heel and calf, and even at the latter point only a very narrow line need be left untouched. Then apply in succession layers of paper previously glued, and as each layer is completed give the whole a liberal covering of glue. In five or six hours this will have become perfectly solid. All this time the leg remains in the original splint unmoved. The box-splint, of course, has or ought to have movable slides. At the next visit lift the leg out of the box-splint and apply a few thicknesses of glued paper, to cover the unglued line on the posterior aspect of the leg. In this way no assistant is needed, and the whole thing is done without the slightest possibility of disturbance to the fracture.

When necessary to split the bandage, an ivory paper cutter will be found very useful, cutting down on it with a sharp knife.

Art. 98.—*Note relative to the Monobromide of Camphor.*

By William A. Hammond, M.D.

(*New York Medical Journal*, May.)

The monobromide of camphor consists of one equivalent of camphor united with one of bromine (C_{10},H_{16},O,Br). It is a white crystalline solid, having the odour of camphor, and to a slight extent that of bromine. It decomposes readily when exposed to the atmosphere, to a heat of 100° Fahr., or to the action of ammonia.

Dr. Hammond's experience with this preparation is eminently satisfactory. He has employed it in two cases of infantile convulsions due to the irritation of teething, with the effect in each instance of preventing the further occurrence of paroxysms which, previously to its administration, had been very frequent. In each case a grain was given every hour, rubbed up with a little mucilage of acacia. Three doses were sufficient in one, and two in the other case. The children were aged respectively fifteen and eighteen months.

In a very obstinate case of hysteria occurring in a young married lady, in the form of paroxysms of weeping and laughing, alternating with epileptiform and choreiform convulsions, Dr. Hammond gave the monobromide of camphor in doses of four grains every hour. The influence was distinctly perceived after two doses were taken, but ten were necessary to entirely break up the attack. This was a very favourable result, as all previous seizures had lasted from five to eleven days, uninfluenced by medication or moral suasion.

The author has also employed it with excellent effect in several cases of headache occurring in women and young girls, and due to mental excitement and excessive study. One dose of four grains was generally sufficient to cut short the attack. In two cases, three doses at intervals of half an hour were necessary.

In wakefulness, the result as it so generally is of cerebral hyperæmia, the monobromide of camphor appears to be greatly inferior to the bromide of calcium, or even the other bromides. But it is apparently indicated in delirium tremens. Dr. Hammond has not yet had the opportunity of trying it in this disease, but he would not hesitate in a case of the affection to administer it in doses of five grains every hour or half-hour, with the confident expectation that sedation and sleep would result.

The monobromide of camphor may be given in the form of pill, with conserve of roses as the excipient, or as a mixture with mucilage of gum-arabic and syrup. The dose for adults ranges from two to five grains.

Art. 99.—*Cholera Prescription.*

By Henry Hartshorne, M.D., Philadelphia.

(*New Remedies*, April, 1872.)

℞. Chloroform, tinct. opium, spts. camphor, spts. ammonia aromatic, āā fʒiss.; creasote, gtt. iij.; oil of cinnamon, gtt. viij.; brandy, fʒij. Mix. Dilute a teaspoonful with a wineglass of water, and give two teaspoonfuls every five minutes, followed by a lump of ice.

Art. 100.—*On Embalming.*

By H. G. Howse, M.S.

(*Guy's Hospital Reports*, vol. xvii. 1872.)

From Mr. Howse's description of his mode of preserving anatomical subjects we extract the following:—

"I consider glycerine to be *the* preservative fluid. It does not, however, prevent maggots from breeding in the muscles, nor does it prevent fungus from forming on the dissections when left exposed to the air. To prevent the former I used to employ, in all the earlier experiments, a watery solution of arsenite of potash, freely injected, before the glycerine. I soon found a practical inconvenience from this, in that it made the subject slightly œdematous, thus requiring more glycerine afterwards to saturate it, and making the injections more expensive. For this reason I tried to prepare a glycerine solution of arsenic. Arsenious acid does not dissolve in this medium in the cold or only to a very slight extent. When the glycerine is heated to destructive decomposition—*i.e.*, to ebullition, other chemical compounds get formed, and then the arsenic dissolves freely. . . . It is not wise, however, to make it take up much more than a pound to the quart. . . . It should be filtered before using. . . . The injection is always made from the femoral artery, opened at the apex of Scarpa's triangle. Two injection pipes, provided with stop-cocks and with long nozzles, are inserted, one passing up and the other down the artery, and a piece of

strong ligature-silk tied tightly around it, to prevent the glycerine escaping. . . . The siphon arrangement is always made use of in injecting—*i.e.* a long piece of india-rubber tubing is tied over the injecting pipe, and communicates with a reservoir placed considerably above the level of the body. To make the siphon arrangement act, this must of course be filled with fluid before inserting the end into the reservoir, and as the viscid glycerine takes a long time in doing this, I usually fill it first with a watery solution of the usual preservative (arsenite of potash), keeping the stop-cock on the injecting tube closed, then inserting the mouth of the tube into the glycerine, and opening the stop-cock. The glycerine injection will now slowly flow. If the arsenical glycerine fluid be made as above recommended, it will be sufficient to inject a quart and a half of it first, corresponding with about one pound and a half of arsenious acid (the injection being completed with pure glycerine). This will be sufficient to prevent maggots breeding in the subject even in summer time. . . . As regards the quantity of glycerine to be used, it will vary with the size of the subject—*i.e.*, with the *bulk* of it. . . . The average quantity that we have expended upon our subjects is about three gallons each. Great care must be taken in keeping the cistern and the pipe full of fluid. . . . If, unfortunately, during the progress of the injection, the pipe should become empty, it is best filled up again with arsenical watery fluid. . . . I have said that it is necessary to *saturate* the subject. This is best done in the following way: After about two gallons have been injected it becomes œdematous; it should then be allowed to stand for two or three days, during which blebs form on the surface; these being pricked, a large quantity of fluid drains away. The other gallon of glycerine being then injected, acts much more effectually in the preservation of the subject than if it were all ejected together. . . .

"Although the arsenical glycerine quite prevents maggots breeding in the subject, it does not prevent the formation of mildew in very hot weather. . . . For preservation, then, during the hot months, I believe it is best to keep the subject wrapped in cloths soaked in carbolized glycerine, and standing in a tray covered about half an inch deep with similar fluid, so that the cloths may remain constantly moist by capillary attraction. After the glycerine injection is completed, the arteries may be filled with the usual paint or coloured paraffin injection."

Art. 101.—*Carbolic Acid as an Anæsthetic.*

By Andrew H. Smith, M.D.

(*New York Medical Journal*, June.)

Dr. Andrew H. Smith reported to the Medical Society of the County of New York, April 22, 1872, some experiments made upon himself which fully confirm the statement of Dr. J. H. Bill as to the local anæsthetic power of carbolic acid.

"In my first experiment," says Dr. Smith, "I painted a spot on the forearm, about an inch in diameter, with carbolic acid of about the

strength of 85 per cent. For about a minute there was a slight burning sensation, after which the integument became entirely insensible, the cuticle being whitened and shrivelled, and the spot slightly elevated. I then with a scalpel made an incision about half an inch in length through the whole thickness of the integument. This was done without even feeling the contact of the knife. The capillary circulation seemed not to be materially interfered with, as the blood flowed as freely as it would from a similar wound under ordinary circumstances. The reparative process was also not impaired, adhesion taking place immediately. Three hours after the application of the acid a needle could be thrust freely into the skin without causing pain.

"In the second experiment carbolic acid was applied as before, and ten minutes after a fly-blister was placed upon the spot. The blister remained eight and a half hours without causing any pain, and without producing vesication.

"In two instances I have applied the acid previous to incising a whitlow. The operation was almost painless, but, as the whitlow was in each case of the superficial variety, the test was not entirely conclusive.

"Inhaled in the form of spray, I have found the acid very useful in allaying irritation of the bronchial mucous membrane; coughs which have resisted all ordinary treatment have been immediately relieved, and in the course of two or three days entirely removed.

"I would suggest the use of a strong solution of carbolic acid as a revulsive, in cases in which a continuous impression is desired. While causing but little suffering, it produces an intense hyperæmia of the skin, which persists for eight or ten days, and is followed by desquamation of the cuticle."

ART. 102.—*On Carbolic Acid, its Composition, Properties, Uses in Surgery and as an Internal Remedy.*

By J. H. BILL, M.D., Surgeon United States Army.

(*American Journal of the Medical Sciences*, July.)

From the facts laid before the reader in this article Dr. Bill thinks that—

1. It is not proven that carbol is a general disinfectant.
2. It is of the greatest use to disinfect wounds.
3. It accomplishes this (*a*) by destroying pus &c.; (*b*) by preventing inflammation.
4. Its use in wounds moderates pain.
5. Its use on the skin relieves itching, and produces an anæsthesia sufficient for minor cutting operations.
6. It seems to be of use internally, in certain cases, in scaly skin diseases, and at least as a moderator of pain in cancer.
7. It has not proved of decided use in other diseases.

Art. 103.—*On the Employment of Carbazotate of Ammonia in Cases of Intermittent Fever.*

By Dr. Dujardin-Beaumetz.

(*Gazette Médicale de Paris*, No. 39, 1872.)

1. Carbazotate of ammonia (picrate of ammonia) acts very efficaciously in the treatment of intermittent fevers.
2. Suppression of the attacks may be obtained by the employment of carbazotate of ammonia in daily doses of from 2 to 4 centigrammes.
3. In these quantities the carbazotate has never any injurious effects, and is better tolerated than sulphate of quinine.
4. The preparation of carbazotate of ammonia is not a dangerous one.
5. The physiological action of carbazotate of ammonia presents very great analogies to that produced by sulphate of quinine.
6. The use of this medicinal agent ought to become general, and in the majority of cases to replace sulphate of quinine.

Art. 104.—*On Eucalyptus Globulus.**

By M. Gimbert.

(*Gazette Hebdomadaire*, No. 40, 1872.)

Eucalyptus and, to a greater extent, eucalyptol possess antiputrid properties, as has been demonstrated in a series of experiments made by the author. Observations made by M. Gubler tend to establish the anthelmintic value of these substances.

The following are the physiological properties of eucalyptus: When applied to a mucous membrane it acts as an irritant and as a congestive agent; when injected subcutaneously it gives rise to a state of slight excitement followed by a period of calm, with weakening of the circulation and respiration and lowering of temperature. With poisonous doses the subject either dies or returns to a normal condition after temporary hyposthenia. In fatal cases the autopsy reveals an anæmic condition of the tissues. The author attributes the death to paralysis of the grey substance of the cord; this view being based upon a number of experiments, according to which the action of eucalyptus would be analogous to that of bromide of potassium and essence of turpentine, and opposed to that of curare.

Experiments made on man have given, to some extent, results analogous to those obtained on animals—excitement with cephalagia and an agreeable kind of drunkenness, followed by hyposthenia. Elimination takes place principally from the lungs and bladder. Under its influence the proportion of urea is increased.

In therapeutics eucalyptol may be employed both externally and inter-

* Read before the Medical Congress of France, held at Lyons.

nally. As an external application it has been principally employed in the form *alcoolature*, in dressings of wounds and for the relief of neuralgic pains. Eucalyptus as a medicine, in its principal pharmaceutical forms (powdered leaves, tincture, essence of eucalyptol in capsules, extract, syrup), may be utilized with success in neuralgia, either of paludial origin and periodic or of a reflex nature; in intermittent fevers; and, finally, in affections of respiratory passages of a chronic catarrhal nature and without cardio-pulmonary lesions. The employment of this medicinal agent is contra-indicated by any inflammatory or acute condition, and no benefit will be derived from it either in neuralgia of inflammatory origin or in acute affections of the throat. It is especially in affections of the respiratory passages (laryngitis bronchilis), at the time of their passage from the acute to the chronic condition and when they are chronic, that eucalyptus may be administered with a hope of good results. It is almost unnecessary to add that in tuberculosis this agent can combat only the bronchial catarrhal elements.

Art. 105.—*New Use of Barnes's Dilators.*

By H. M. Morgan, M.R.C.S.

(*British Medical Journal*, May 18.)

Mr. Morgan records two cases in which he resorted to Barnes's Dilators with advantage.

The first was a case in which the waters broke early, and the os small and unyielding. Mr. Morgan thought that by making an artificial bag of waters he would materially assist labour, so with some difficulty he managed to introduce Barnes's largest bag within the os by the help of an uterine sound. When once it was there it was easy to pump in nearly a pint of warm water; and the labour then progressed very well, each pain dilating the os by means of the artificial bag quite in a natural way. He thinks that by this means he gained some hours.

The second case was one of miscarriage at the eighth month with profuse hæmorrhage, placenta prævia, and unyielding os. Mr. Morgan ruptured the membranes with a stiletto; and then, by means of a long pair of ovum-forceps, he passed Barnes's largest bag (rolled up small) quite into the womb; and afterwards pumped into the bag nearly a pint of warm water. As she had no pain worth mentioning, he had given her forty minims of liquid extract of ergot before puncturing the membranes. As soon as he had filled the bag with water, he commenced dilating the os himself by drawing at the tube of the bag till his finger and thumb could reach the root of the tube in the vagina. The result was, that in little more than five minutes he pulled a soft bag, as large as an ordinary new-born child's head, through the os; and then the vagina and perineum were gradually dilated in the same way until the bag came quite away. He found the head presenting, and pains were coming on moderately; but, as there was no time to be lost, he preferred not to wait for nature to act; so, with one hand internally and the other externally, he turned the child and brought a foot down, and soon com-

pleted the labour with the aid of the patient's own pains and efforts. The placenta was expelled naturally, and the womb contracted well after it. Dilatation, he says, could not possibly have been accomplished so quickly, so easily, so painlessly, and so safely by the hand. Moreover, this bag, by being pressed against the bleeding placental vessels in its passage through the os, compressed them and checked the hæmorrhage, in the same way as the head does in those cases where the pains are strong enough to keep it well pressed against the os.

Art. 106.—*On Virgin and Humanized Lymph.*

By Benjamin Lee, M.D.

(*New York Medical Journal*, May.)

From a series of careful experiments and observations, Dr. Benjamin Lee arrives at the following conclusions :—

1. That virgin vaccine lymph direct from the heifer is not easily absorbed into the human system, and that therefore it is not advisable to attempt its general use in the face of an epidemic or the presence of direct contagion.
2. That it is less readily absorbed in the case of infants than of older children and adults.
3. That, when absorbed, it produces the vaccine disease in both its local and constitutional manifestations in its most normal and perfect type, without unusual severity or complication.
4. That virus produced by the inoculation of a single human being with virgin lymph, for the first time, is absorbed into the human system with excessive readiness, constituting the most active virus that can be procured.
5. That such virus is more likely to induce true vaccine in persons already vaccinated than ordinary humanized virus of long descent, and that it is therefore reasonable to suppose that its prophylactic power is in all cases greater.
6. That what is true of lymph of the first remove is also immeasurably true of that of several subsequent removes, but to what extent these experiments do not determine.
7. That, accepting the foregoing conclusions, it is a matter of primary importance that every large centre of population should be provided with the means for frequently revivifying its supply of virus by a return to the original source.

Art. 107.—*Emmenagogues.*

By H. Parvin, M.D.

(*American Practitioner.*)

Dr. Parvin, in answer to a Nebraska correspondent, gives the subjoined formulas for emmenagogue pills : In anæmic amenorrhœa, one composed of equal parts of dried sulphate of iron, white turpentine, and

aloes. The pill may weigh two or three grains, and may be given twice or thrice daily.

Another may be made of equal quantities of rue, savine, and ergotine, and half as much either of aloes or of gamboge. The pill may weigh from three to four grains, and two or three may be given three times a day.

Art. 108.—*Hydrate of Chloral.*

By Lawrence Turnbull, M.D.

(*Medical and Surgical Reporter*, August 24 and October 31.)

The following are some of the conclusions of Dr. Lawrence Turnbull, as drawn from his experiments, observations &c. on this subject: 1st. There are three degrees of the operation of chloral on animals and man. The first is feebly soporific, with slightly nervous sedative action. The second is an intense soporific action, with diminutions of sensibility. At this period there is a deep sleep of variable duration, without apparent trouble of the principal functions of life. The third degree, complete anæsthesia, with total loss of general sensibility and muscular power—cataleptic state. Death almost always follows this degree of action, as was seen in his experiments on animals. 2nd. Under the microscope the blood was seen moving, with some bright-red or dark-red particles. 3rd. Death takes place last at the heart, which is kept in action long after all signs of death in the animal were present, as shown by removing the sternum &c. 4th. Sleep, with diminished heat of the surface one or two degrees below the natural standard. 5th. In typhoid and typhus fever one must commence and continue in small doses; five grains is the average quantity required. 6th. It increases the flow of the menstrual fluid. 7th. Seventy grains of the hydrate of chloral is equal to $\frac{1}{2}$ grain of morphine employed hypodermically, and is not apt to cause so much disturbance of the stomach. 8th. Males require a larger dose than females. 9th. In affections of the eye it requires care to use it, as it is apt to cause swelling, redness, and excessive flow of watery secretions, with obscuration of vision. 10th. In sunstroke or heat toxæmia it is a valuable aid to produce sleep in that restless state after reaction produced by frictions of ice and ice-water to the head and body. 11th. In cases of impending death the means are to support the system by heat, food, and artificial respiration, with stimulation and small doses of strychnia.

Art. 109.—*The Administration of Anæsthetics.*

By David Webster, M.D., House Surgeon to the Manhattan Eye and Ear Hospital, New York.

(*New York Medical Journal*, August, 1872.)

Dr. Webster having been requested to note down, in each case, the length of time from the first inhalation of ether to the commencement of the operation, and the recurrence or absence of vomiting, places the results

of his observations in one hundred cases before the profession: Average length of time occupied in producing anæsthesia, 5·84 minutes. The shortest time recorded is one and a half minute, in the case of a child; the longest is twenty minutes. Vomiting occurred in 42 per cent. of the cases. His impression is that the average quantity used was from four to six ounces. In most cases the patient had eaten no dinner, the inhalations occurring during the afternoon. In giving ether in this hospital a newspaper cone, lined with a towel, is always used. Three persons are generally necessary in giving ether to an adult—one to manage the cone and the patient's head, and an assistant on each side to hold him in case he struggles violently. This they can best accomplish by placing one hand on his shoulder, while with the other they seize the wrist. The vast majority of hospital patients resist more or less violently during the stage of excitement, while the reverse seems to be true of the more intelligent and better-trained cases met with in practice.

He remarks, in giving ether, that the newspaper cone should be held a little way from the patient's nose while he takes the first two or three inspirations, so that the ether may be at first largely diluted with air. The struggling once commenced, however, more ether should be poured into the cone, the air more perfectly excluded, and the patient hurried through this disagreeable stage as rapidly as possible. His countenance should be narrowly watched, however, and his breathing assiduously attended to. The moment the face commences to assume a purple or dusky hue the ether should be at once removed, and the tongue drawn well forward by means of a tablespoon handle or whatever else may be convenient. This is usually sufficient to re-establish a healthy breathing and due oxygenation of the blood. But if it fails, artificial respiration should be resorted to and cold water dashed in the face.

In Dr. Agnew's service he has given a mixing consisting of one part of chloroform and four parts of ether to thirteen patients. The average length of time in producing complete anæsthesia was three minutes. The average quantity of the mixture consumed was two ounces. Vomiting occurred in only three cases out of the thirteen. Three patients had eaten their dinners, but in neither of these did vomiting occur.

The general feeling among the surgeons of the Manhattan Eye and Ear Hospital seems to be that chloroform is dangerous, and that its indiscriminate use as an anæsthetic is unjustifiable.

Art. 110.—*Physiological Action of Chloral.*

By Alexander Edward McRae, M.D.

(*Edinburgh Medical Journal*, August.)

Dr. McRae has published an account of a number of experiments undertaken with the view of obtaining the objective phenomena exhibited in a healthy animal under the influence of a varying dose of chloral. The animals experimented on were rabbits.

The following were the general results observed: 1. When sleep began

to come on the rabbits laid themselves in their natural position for sleep and seemed comfortable. 2. When asleep they sometimes moved as if shifting for a rest; sleep was not continuous. 3. Before sleep came fully on, and when the number of respirations was about its lowest, the respiratory movements were somewhat jerky. 4. When sleep was very profound the respirations were abdominal. 5. When asleep, but not totally anæsthetized, loud noises, if they did not waken them, increased the respirations. 6. When completely anæsthetized neither loud noises nor pricking influenced the respirations. 7. No rabbit recovered that was at any time completely anæsthetized. 8. When asleep they would frequently wake up and eat, then go to sleep again; and when the effects passed they ate ravenously. 9. The slowing of the respirations was the premonitor of sleep, and when the respirations fell to 28 death followed. 10. When asleep the increase of the respirations was the premonitor of resolution. 11. Shivering was not observed in any instance where death was to supervene, but it preceded resolution. 12. Sometimes 10 grains produced sleep; sometimes 30 grains had scarcely any effect; 60 grains in two cases killed, and in another did not produce complete anæsthesia. 13. Sometimes the hyperæsthetic state was of short duration; sometimes it was scarcely appreciable, so rapidly did the anæsthetic state supervene. 14. Small doses increase, large doses decrease, the co-ordination of nerve force. 15. Vision seems to be affected before hearing, hearing before smell, smell before touch. 16. Frequently, on recovery from a large dose, they preferred to sit under the fire, though hot cinders were falling upon them. 17. When anæsthetized the eyelids were generally fully open. 18. In falling they did not seem to have a tendency to fall to one side more than the other. 19. Salivation was occasionally exhibited, also relaxation of the sphincters, with increased peristalsis of the bladder and rectum. 20. The solution, when injected under the skin, was absorbed with great rapidity. 21. In the small doses, when the effects passed off, they seemed more lively after than before the experiment. 22. When ten or more grain doses were given, and sleep had passed off, they did not seem to have the power of co-ordinating their movements for some time. Their hind-legs were the first to give way, and the last to recover. 23. Of the voluntary muscles those of the ear, neck, and jaws were the last to give way and the first to recover. 24. Rigidity set in immediately after the respirations ceased. Sometimes the hind-quarters became rigid before the respirations ceased. 25. About four minutes was the time that elapsed between the injection and the manifestation of the first symptoms attributable to chloral. 26. The respirations were very considerably increased immediately the injection was commenced. 27. The injection almost always caused local inflammation, which ended in resolution, abscess, or gangrene. The latter was generally of the dry kind, as observed in senile conditions. 28. In no case was complete anæsthesia produced without death following.

Post-mortem appearances.—The superficial vessels were empty, and the parts consequently had a blanched appearance. All the internal vessels were full of blood. The walls of the heart were flaccid. Both sides of the heart were gorged with blood. The lungs were congested, with here and there apoplectic spots. I have seen the same conditions

in cases of alcoholic poisoning. The vessels of the encephalon were full of blood. The odour of chloral was distinctly perceptible in the substance of the brain.

Dr. McRea remarks: "The superficial vessels and arteries had contracted; and the heart, being gradually deprived of nerve force, was unable to contract on its contents and keep up the circulation; consequently, there being an impediment in front, the blood was retained passively in the venous tracts."

In small doses it seemed to act as a stimulant, and produced heat of surface. In large doses, when the anæsthetic state was produced the surface became cold. Professor Haidenhain, of Breslau, at the conference at Innsbruck in 1869, stated that "irritation of sensitive nerves produces a rapid diminution of blood-heat, a sensible decrease of the calibre of vessels, and a decrease in the frequency of the pulse." Now we have all these conditions produced by a dose of chloral. There can be no doubt that chloral, in certain doses, does act as an irritant, but of the toxic kind. Whether it acts as an irritant locally on the peripheries or on the more distant centres is a question that still remains to be settled. That it does reach the centres is beyond doubt, for we have found it abundantly in the brain tissues. If the above phenomena are caused by its local action, then it must be a most powerful local irritant—more powerful, indeed, than any other of its chemical fellows, whose action, generally speaking, is nearly analogous, such as alcohol or chloroform. It is true that the local effects produced by the hypodermic injection—viz., inflammation, abscess, gangrene—would rather favour the hypothesis of this local action; but we must remember that the solution used was necessarily concentrated; also that, with the exception of a few rare cases, little or no inconvenience was caused by taking the same size of a dose by the stomach for many months together. Again, when a part is burned or rapidly destroyed, we see the local effects immediately, but no toxic condition follows. True, we sometimes have what is called shock; but the phenomena evolved are quite distinct, and recognisable from those produced by a toxic agent. Sensibility characterizes the one, insensibility the other. The presumption, therefore, is strong that chloral acts directly on the nerve centres.

When small doses were given, there was a very manifest exaltation of the temperature of the surface; when large doses were given, and the anæsthetic state induced, the surface got cold. The hyperæsthetic state was first induced and always was present, though once or twice its presence was scarcely noticeable, so rapidly did the anæsthetic state supervene; and when the larger doses were given anæsthesia followed, thus leading us to believe that the peripheral nerves became paralysed, either by exhaustion of nerve force in the hyperæsthetic stage or by direct poisoning and consequent molecular disturbance at the centres. We must here observe that when we remember Claude Bernard's experiments with the sympathetic nerve, it does seem anomalous to say that peripheral paralysis was present, and that the surface was cold and the parts post mortem had a blanched appearance. But we must also remember that the heart was paralysed, and, consequently, the arterial system was empty, though the larger venous tracts were gorged. This condition, though helping to prove

that the action of chloral is on the centres, demands explanation. Professor Stirling says that "there is a constant reflex influence maintained by a sensitive nerve upon the blood-vessel nerves." Nerve force being equally distributed to these two sets of nerves, the blood-vessels maintain their normal calibre. But when the peripheries of the sensitive nerves become paralysed, the inhibitory nerve-fibres of Remak gain increased power, or at least gain the ascendancy (Meryon), the calibre of the vessels decreases, and consequently, also, the flow of the blood; hence the coldness of the surface and the blanched appearance of the flesh. When given in small doses it stimulates the sensitive nerves, which gain the ascendancy over the vaso-motor fibres; hence we have relaxation of the walls, enlarged calibre, increased vascularity, temperature, and hyperæsthesia, exactly the opposite of what takes place when a large dose is given.

Could chloral be used in doses sufficiently large, so as to let the fibres of Remak gain the ascendancy over the sensitive fibres, and could this action be localized and not become universal and lead to death, as we have seen by these experiments, then we should have in chloral a most potent power for good. This, however, can never take place so long as the body possesses absorbents. The fact that rigidity set in immediately after the respirations ceased, and sometimes before, thus producing a state analogous to that produced by intense cold, proves that chloral induces great depression of nerve force; and when this depression or exhaustion becomes general or complete death must follow.

Art. 111.—*Mode of Administering Creasote.*

(*Canada Medical Journal*, July.)

As creasote is now frequently employed in the treatment of typhoid fever, and is exceedingly distasteful to some patients, it may be worth while to mention here a formula which in great measure covers its flavour, and is easily prepared: Creasote, 3 drops; essence of lemon, 2 drops; orange-flower water, 1 ounce; spring water, 3 ounces. A spoonful to be taken at frequent intervals throughout the day.

Art. 112.—*The Nature and Prevention of Communicable Zymotic Diseases.*

By Alfred L. Carroll, M.D.

(*The Question of Quarantine*, 8vo, pp. 22. New York, 1872.)

Dr. Carroll's general conclusions are as follows:—

"I. Communicable zymotic diseases depend upon material organic poisons, and although some of them (as plague, cholera &c.) may appear to be endemic in certain localities, it is probable that they exist there only by the retention and recrudence of their specific contagion; it is almost certain, at all events, that they do not arise spontaneously elsewhere.

"II. 'Quarantine of observation' should in all instances apply to living beings in whom contagion may remain latent, rather than to inanimate substances which may be disinfected at once.

"III. Preventive measures should be adapted to the respective modes of contagion of the several diseases; stricter isolation being necessary in the case of those poisons which are volatile enough to be conveyed in the air or in vapour of water than with those which are transmissible only by solid or liquid media."

Art. 113.—*The Action of Antimony.*

By S. Radziejewski, M.D.

(*Reichert and Du Bois-Reymond's Archiv*, Part iv., 1871, and *Glasgow Medical Journal*, May 1872.)

From a series of experiments on frogs and other animals Dr. S. Radziejewski comes to the following conclusions in regard to the action of antimony: 1. The emetic effect of the tartrate of antimony introduced into the stomach is the result of the action of the drug on the mucous membrane of the stomach, and not of its absorption into the blood. The effect of the peculiar irritation of the stomach produced by the substance is, by reflex action, to produce vomiting. 2. The depression of the action of the heart is also a result of reflex action, and not, as some have supposed, a special result of the action of the potassium contained in the tartrate. 3. Antimony has, in addition to its effects on the intestinal canal, also a general action on the organism corresponding to that of arsenic.

Art. 114.—*Methylene Ether.*

By Benjamin W. Richardson, M.D., F.R.S.

(*Medical Times and Gazette*, November 23.)

Since the commencement of the recently revived controversy on anæsthetics, many members of the profession have asked Dr. Richardson for answers to inquiries they wish to have solved. Most pertinently stands forth the question of safety. "If you yourself were about to undergo an operation, and had determined on taking an anæsthetic, which would you select in respect of safety and convenience—chloroform, ether, your own bichloride of methylene, or other substance?" This was a question asked of Dr. Richardson within the last few days, and which he answered without hesitation. "For safety I might prefer ether, for convenience I should prefer methylene; but I should actually combine the two. I should inhale from a mixture of pure methylene bichloride and absolute ethylic ether, having a fluid specific gravity of 1·100."

The boiling-points of pure methylene bichloride and of ethylic ether are within 4° Fahr. of each other; the vapour-density of each is nearly the same—that of ether being 37 and that of methylene 42·5, compared with hydrogen as the standard of unity. In combination, there-

fore, the two liquids yield a mixture possessing a steady and uniform boiling-point and a nearly equal vapour-density, so that equality of effect is sustained throughout a long administration. The vapour is, moreover, agreeable to inhale, it is neither irritating nor suffocating. Dr. Richardson is inclined to think, too, that the physiological action of the methylene is favourably modified by the ether.

For quickness of action the mixture thus described does not approach simple methylene bichloride, but for safety it stands hardly second to the safest anæsthetic Dr. Richardson ever experimented with—viz., methylic ether gas. It is best administered from a simple mouth-piece that has been constructed by Messrs. Krohne and Sesemann.

From three to six fluid drachms is the average quantity required to produce good anæsthesia.

For the sake of brevity Dr. Richardson calls the combination methylene ether.

Art. 115.—*Electro-Therapeutical Apparatus.*

By Dr. Lincoln.

(*Medical Press and Circular*, July 25.)

At a recent meeting of the Boston Society of Medical Sciences Dr. Lincoln exhibited the electro-therapeutical apparatus of Brenner, consisting of a mahogany tablet thirty inches square, upon which are arranged the following instruments:—

1. "Current-selector" or switch-board, for introducing into the circuit any number of elements up to sixty. Brenner himself prefers the use of pegs to that of the switch, but they are more troublesome to handle.

2. "Upright tangent-galvanometer," the wire of which measures 0·008 inch in diameter and offers 82·4 B. A. of resistance.

3. "Commutator," for instantly reversing the direction of a current, whether galvanic or Faradic, without changing the position of the electrodes in reference to the body.

4. "Rheostat," forming a portion of an accessory circuit. It contains 2100 units of resistance (Siemens, = 200·7 B. A. units), and as these are arranged by tens the instrument enables us to measure 210 grades in the intensity of the current, whether generated by one cell or several. Brenner attaches great importance to its use in treating the auditory nerve, as by it we are enabled to begin with a very minute fractional dose of electricity and to raise the quantity by degrees, so as to avoid the infliction of a sudden shock, which might prove a serious injury.

5. "Rheotome." This instrument acts in two ways, depending on the arrangement of certain pegs connected with it. In the first place, when a constant current is flowing, it can produce a single momentary interruption; in the second place, the current not flowing, it can produce a single momentary passage of the current; and the shock—from the interruption, or from the passage of a current, as the case may be—can be made to last a longer or shorter time by sliding a metal plate in

or out. The instrument is essentially composed of a finger of brass, swinging horizontally upon a pivot, and its course impinging upon the plate of metal just mentioned—the current enters at the pivot—and is conveyed through the brass finger to the metal plate during the moment of contact.

6. "Automatic interruption of the constant current." This consists of a "Neef's hammer," similar to those attached to the electric alarm-bell. The rate of rapidity with which interruptions can be effected varies from four to ten in the second, which is sufficient for practical use. The indicator of the galvanometer, which during the passage of the uninterrupted current would mark 35°, points to the neighbourhood of 15° and 20° when the current is interrupted by this apparatus; showing that a great quantity of the current still passes.

7. Du Bois-Reymond's "sledge apparatus" for generating the Faradic current. The primary coil contains about 320 turns of wire, the secondary 9970. The tetanizing effects of the current from the primary coil seems greater than that from the secondary; its *quantity* is distinctly apparent in the deflection of the galvanometer-needle to the extent of nearly one degree. The secondary coil gives a spark of a tenth of an inch only, its construction not being suited for the development of the enormous tension which some of Mr. Ritchie's coils display.

The hammer is made in two pieces, the inner of which may be drawn out like a telescope slide for the purpose of retarding the rate of vibration. By weighting it with two or three small copper coins it may be retarded still farther, giving as few as four strokes in the second; the extreme rate of rapidity being indicated by the production of the musical note *F*, proving that 168 interruptions per second are effected.

The motive power of this Faradic apparatus is furnished by two Leclanehé elements; the galvanic current is obtained from sixty Daniell's cells, as modified by Siemens and Halske.

The Leclanché element consists of a cylinder of zinc immersed in a solution of sal ammoniac, and a piece of carbon packed with powdered binoxide of manganese and carbon in a porous cell. The cheapness of the exciting fluid—for only one fluid is required—is a recommendation of this form of battery; it is said also to be very constant, and it certainly makes very little trouble or dirt. It generates ammonia gas when in action, which would be an objection to the use of a large number of cells in an occupied room.

The Siemens-Halske element cannot well be described without a diagram. It is a very constant element and requires little attention. The metal and fluids are the same as in an ordinary Daniell's cell, but the diaphragm (of porous clay) is reinforced by a layer of papier-maché some inches thick, which increases the resistance very much.

The arrangement of switches in the apparatus is such that three patients can be operated upon at once, one receiving the current from the primary coil, another that from the secondary, and a third the galvanic current.

The apparatus deserves especial praise for the solidity with which all connections are made, and the accuracy with which the switches are adjusted and the pegs fitted. The only instrument liable to be injured

by careless usage is the Faradic apparatus, especially the hammer; it would not be a proper thing to entrust to the management of a nurse; but it is capable of producing a great range of effects, and its currents are very smooth and equable.

Krüger and Hirschman, of Berlin, constructed the apparatus.

In answer to a question from Dr. Bowditch, Dr. Lincoln said that the papier-maché served the purpose—First, in keeping the zinc and copper at a fixed distance from each other; and second, in offering a great resistance, which increases the penetrating force of the current. In passing from the zinc to the copper, the current had to traverse two inches of the densely-packed papier-maché besides the earthen diaphragm.

Art. 116.—*On Electro-Therapeutics.*

By George M. Beard, M.D.

(*Medical Press and Circular*, July 10.)

At the annual meeting of the American Medical Association, Dr. George M. Beard, of New York, read a paper on Recent Researches in Electro-Therapeutics. He spoke of the great and rapid improvements in apparatus, claiming superiority for America over Europe in this respect at present; and exhibited a battery and its attachments made by the Galvano-Faradic Manufacturing Company of this city. He demonstrated his methods of "localized electrization," "general Faradization," "electrolyzation," and "central galvanization." This last consisted in "placing the negative pole at the pit of the stomach, and applying the positive over the head, sympathetic, and pneumogastric in the neck, and down the spine, so as to bring the whole central nervous system under the influence of the current." It had proved very useful in certain obstinate skin diseases, as well as in hysteria, neuralgia, neurasthenia, and many other nervous affections.

Among the points he had recently demonstrated were these:—

The nutrition of children was often much improved by general Faradization. Two pups of a litter of four were treated by the speaker in this manner, and were found at the end of a month to weigh several ounces more than their mates.

Children bore electricity better than adults; but some constitutions could not endure it, however administered.

Malignant growths could sometimes be treated with great advantage by a method of "working up the base electrolytically." The advantages of electrolysis in the treatment of these tumours were less hæmorrhage, less shock, less danger of pyæmia, and more rapid healing. It would almost always relieve the pain of tumours, but did not prevent constitutional infection.

Dr. A. B. Crosby, of New York, spoke of a case of chronic eczema of the leg under his care, which had resisted other treatment, but was decidedly improving under "central galvanization," as just described. Also of a case of organic stricture of the rectum, where he had assiste Dr. Beard in an electrolytic operation after returning the sphincter.

Art. 117.—*The Hot-Sand Bath.*

(*Medical Times and Gazette,* October 19.)

A correspondent (R. D.) calls the attention of his professional brethren to the hot-sand bath which has been established by Dr. Conradi at 22, Aberdeen Place, Maida Hill, London.

The patient is introduced into a warm, comfortable room, in which is a bath, fenced round with curtains, filled with sand heated to about 100° to 120°. In this a longitudinal groove is scooped to receive the patient, who is wrapped in a sheet and so protected from contact with the sand. There is a comfortable pillow for the head.

Then the bath operator gradually covers up feet, legs, arms, and trunk with the warm sand. A bucket of hotter and one of cooler sand are at hand, so that the temperature can be adjusted with the greatest nicety. The feeling of warmth is very agreeable, and the weight of the sand is just enough to cause a pleasant sense of compression and support. After an hour's delightful repose the patient rises, is refreshed by a sluicing with hot water, and goes away refreshed.

The effect is very different from that of hot water, and still more from that of hot air or steam. There was absolutely no commotion of the heart, nor any of the grilling effect on the windpipe which R. D. has experienced in Turkish baths. Altogether, it seems a good thing when we want to produce measured perspiration and relieve congestion of the internal organs.

Art. 118.—*Bleached Tincture of Iodine.*

(*Medical Press and Circular,* October 16.)

It is said that sulphite of soda will decolour iodine and yet increase its effect. Here is the formula: ℞ Tinct. of iodine; glycerine, pure, āā ʒj; sulphite of soda, ʒj. Rub the salt to a powder in a small mortar, and add the glycerine gradually; then pour in the tincture of iodine and triturate gently, until the solution is effected and the mixture assumes an amber colour.

Art. 119.—*Test for the Purity of Creasote.*

(*New York Medical Record,* October 1.)

It is said that creasote may be distinguished from carbolic acid (which is sometimes substituted for it) by mixing the suspected sample with pure glycerine; pure creasote is insoluble in this medium, whereas carbolic acid makes a bright solution, and when present in considerable quantity it makes creasote also soluble in the mixture.

Art. 120.—*Treatment of Chloroform Accidents.*

By Charles Kidd, M.D.

(*British Medical Journal*, October 26.)

Dr. Kidd suggests a steady uniform trial of electricity to the lungs, not heart; no Silvester or Marshall Hall methods, but a gentle turning of the patient on the side; trial of electricity for at least two hours, acupuncture of the heart as a last forlorn hope. A fine needle should be introduced in the intercostal space, so as to reach the heart's apex, the auricle to be avoided.

Art. 121.—*On the Use of Baths in Acute Rheumatism attended with Head Symptoms and High Temperature.*

By Henry Thompson, M.D., F.R.C.P., Physician to the Middlesex Hospital.

(*British Medical Journal*, August 3.)

A case has lately occurred in the Middlesex Hospital illustrating the beneficial effects of the bath in acute rheumatism attended with head symptoms and high temperature. Dr. Thompson, in his remarks on the case, observes that it is only now and then, in a few rare and scattered instances, that acute rheumatism proves fatal by an unexpected outbreak of overpowering nerve-symptoms, and such a result would have ensued in the instance recorded, according to Dr. Thompson's opinion, if the bath had not been used. The fatal issue in similar cases was formerly referred to the occurrence of metastasis, meningitis, and the like, but now it is said to be due to hyperpyrexia. To this last term, if used in a practical sense, Dr. Thompson makes no objection, as the importance of very high temperature cannot be overrated as a symptom; but in a pathological point of view he thinks that its influence has been exaggerated, for the nerve-symptoms invariably precede the hyperpyrexia. Nevertheless a high body heat, ranging from 108 degrees to 112, is incompatible with life and it is necessary to lower it by such means as are available, and Dr. Thompson thinks that the use of the bath is the best therapeutical agent. The temperature of the bath is 90 to 95 degrees in the first instance, and is gradually reduced by the addition of cold water to 70 degrees. The clinical thermometer must practically be the best guide for the employment of the bath, for at a lower body temperature than 102·5 degrees it would not be desirable to use it. It is important to observe that in the case recorded by Dr. Thompson the most severe and extensive chest complications, such as pneumonia, pleurisy, bronchitis, and pericarditis, underwent no perceptible change for the worse in consequence of the bath.

Art. 122.—*Kerosene Oil in Chronic Rheumatism.*

(*New York Medical Record,* October 1.)

A New Zealand physician recommends the internal administration of this substance, a teaspoonful taken in a wineglassful of water every other night having been the form in which it was administered to the case which he reports as cured by it. It is stated that no unpleasant symptoms were produced; no loss of appetite, or effect upon the functions of the bowels or kidneys.

The unpleasant taste has been palliated in some cases by allowing a pinch of salt to dissolve in the mouth before taking the remedy.

Art. 123.—*On the Treatment of Rheumatic Gout by the aid of the Constant Galvanic Battery.**

By Julius Althaus, M.D., M.R.C.P.

(*British Medical Journal,* August 24.)

The author of the paper commenced with some remarks on the nature and pathology of rheumatic gout, which he likened to the atheromatous process in the internal tunic of the arteries occurring in old people, and which, he said, was one of those highly insidious and chronic inflammatory conditions characteristic of the period of involution and senile decay. After glancing at some results of recent microscopical research in the morbid anatomy of rheumatic gout, the usual treatment of this disease was criticised and found to be open to improvement. The author had, for the last six years, sought and found opportunities to use the constant current in such cases, and had been well satisfied with the results. It could not cure rheumatic gout; it could not prevent the patients from advancing in age, nor check altogether the process of involution and senile decay to which the system must in the end succumb; but it did good in the following ways: 1. It acted as a general tonic to the system, and improved all the most important functions of the body, if applied in a peculiar manner which was described in the paper. 2. It procured sleep, even in cases where opiate or chloral did not answer. 3. It relieved the pain. 4. If perseveringly applied it reduced deformities. The author did not wish to imply that the use of internal remedies should be altogether eschewed in the treatment of this disease, as by thus acting we should only deprive ourselves of many chances to do good to our patients; but in the cases treated by him he had given the first place to the constant current, and given medicines internally only for removing complications. He laid stress upon the necessity of persevering with the galvanic treatment for a considerable time in order to do permanent good, and gave directions as to the way in which the treatment should be carried out.

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* Read before the British Medical Association.

Art. 124.—*Styptic Colloid as a Local Application in Erysipelas.*

By George F. Elliott, M.D.

(*The British Medical Journal*, Oct. 26.)

Dr. Elliott calls attention to the great value of Dr. Richardson's styptic colloid as a local application in erysipelas. It will usually be found sufficient to paint it freely over the affected surface about twice in twenty-four hours, though there can be no objection to using it oftener should the comfort of the patient require it. Its application will be found to be almost immediately followed by relief from the peculiar stinging sensation and feeling of tenseness in an erysipelatous part, and it seems to have a decided effect in arresting the progress of the disease. It has the additional merit of affording protection from air, it has an agreeable odour, and it is cleanly. Its disinfectant properties, too, would probably be useful in preventing the diffusion of the materies morbi in hospitals.

Art. 125.—*Disinfection in connexion with Small-pox.*

By Charles R. C. Tichborne, F.C.S., M.R.I.A.

(*Medical Press and Circular*, July 31.)

At a recent meeting of the Medical Socicty of the College of Physicians of Ireland, Mr. Charles R. C. Tichborne read a paper on—

DISINFECTION IN CONNEXION WITH SMALL-POX.

"It has been conclusively proved that all rooms are filled with a certain amount of dust moving about in variable quantities—at least, to all intents and purposes it may be considered as never being absent. The greater proportion of this dust, as shown by Tyndall in the analyzing tube, is organic, or, in other words, can be destroyed by heat. As regards experiments performed upon the development of bacteria, they would properly only bear upon epidemic diseases from this point of view; but I myself do not see that there is anything particularly to connect them with small-pox or such like contagious diseases. They are always the forerunners of putrefactive change when atmospheric air has been in contact, but this simply proves that the germs of bacteria are always present in ordinary atmospheric air. Here is a substance that was once a solution of milk sugar, now converted into solid lactate of lime by germs taken at as high an altitude as the top of Nelson's Pillar. But these results can be obtained equally well when there is no small-pox in the city.

"There is, however, another view to take of the atmospheric propagation of disease, which, I think, has been too much lost sight of. This is the mechanical action of this dust, or the raft theory, as I will call it.

I, however, lay no claim to the use of the word raft. It was used by Professor Tyndall in one of his lectures to explain how the particles of a *non-volatile* salt, chloride of sodium, were always found in the air. Now, as we know that the virus of small-pox may be dried without impairing its activity, we have all the requisites for dissemination by the atmospheric rafts. If we consider the immense amount of inoculable matter that is disseminated in a city like this, where 600 or 700 lie ill of the same contagious disease, we shall see no difficulty at arriving at this conclusion. I have no hesitation in saying that there is not a cubic inch of atmosphere in Dublin where the small-pox virus is not. But, like all poisons, there is, I suppose, a point of attenuation where it is inert, and to keep it below that point is the great use of volatile disinfectants. The dried virus floating upon those rafts cannot be affected by non-volatile disinfectants.

"I am of opinion that it would be dangerous in the extreme to cast away these now old and well recognised friends. In fact, to me it seems to be only within the last few years that we have been beginning to understand the principles of disinfection. Does not the real difficulty of disinfection lie in our misapplication of each particular disinfectant, which has its peculiar function, and our want of knowledge of its action on those germs at present unknown? If we use chlorinated lime to disinfect a room (chlorinated lime being simply an oxydizer), what do we do but facilitate the efforts of the atmospheric oxygen to purify by oxydation. We charge the air with nascent oxygen, or that element in its most active form. Thus this air that had been already artificially deprived of its activity outside by contact with contagious matter, is re-oxydized to its maximum capacity. Now, although this is quite consonant with our chemical knowledge, it might be said that, after all, it is but a theory; but let us see how it agrees with our experience.

"On the first week in November, 1871, in an establishment the name of which, from obvious reasons, it is not desirable to mention, a case of small-pox occurred. As there were about 200 beds upon this establishment it is almost needless to remark that considerable alarm was felt by those with whom rested the responsibility of management. A consultation was held, and a well-known and well-advertized disinfectant was used with every precaution as regards cleanliness. Imagine the consternation when case after case was sent out of the house, until the eleventh was taken to the hospital on the 6th January, who died on the 11th of the same month—a case every fifth day. A consultation was again held, and with advice the following plan was adopted. The disinfectant was changed, and the use of carbolic acid and chlorinated lime was agreed upon. The carbolic acid (pure) was chiefly used in water-jugs, a few drops in each jug. A man was told off especially to disinfect the place, and to do nothing else. In the morning he made his solution of 'chloride of lime,' about ½lb. or 1lb. to the gallon of water, in a large tub. It was allowed to subside, so that it was quite bright and clear when he wanted it for use. At three o'clock p.m. he went through all the rooms, sprinkling the solution over every floor, and the windows were left open, so that the rooms were dry by the time they were required for use, equal attention being paid to the mechanical cleaning of the walls. The change in the system of disinfection was

made on the morning of the 11th of January, the day when the last case was buried, and from that day to the present there has not been a single case of small-pox in this seething mass of humanity.* Permanganate of potash is invaluable for certain special applications. Here is a simple experiment, which, I think, conclusively proves the value of chloride of lime as an oxydizer. I blow through a series of wash bottles and tubes. In the first bottle the air traverses a fermenting mass containing a weak solution of a ferrous salt. If the air contained any readily available oxygen (it matters not whether we consider it ozone, or condensed oxygen, or nascent oxygen, if it does its work) it will be deprived of it. This fact is demonstrated by being passed over ozone test-paper contained in the next tube. There is no evidence of decomposition. It is then passed in the next bottle through water containing a few drops of chlorinated lime, and then through a wash bottle containing a solution of ammonio-chloride of silver to remove any trace of chlorine. It lastly passes through a tube containing the ozone paper, which is now seen to be rapidly acted upon by the air. It is completely changed in its character, and is now a powerful oxydizer; and it is immaterial to our purpose how this has been brought about. It is now replenished, ready to do its duty and fight the battle with the rafts of contagion, and if it only succeeds in further attenuating the effects of this poison by burning up a fraction, the 'disinfectant' has done some good.

"Xylol's action is said to be due to the fact that it becomes an antiseptic in the blood. Now it is probable that if it does act as such, it is due to some product of oxydation. That it is really rapidly oxydized there can be no doubt from the fact that a peculiar odour, distinct from xylol, can be perceived in the urine.

"From the reports of the medical men I should consider the efficacy of xylol as doubtful, but it is self-evident that it may not necessarily possess specific properties to be an active medicine. I would require a lengthened experience of its capabilities at the bedside to determine its actual value in the human laboratory. Although its action may be generally prognosticated, it can never be proved in the test-tube.

"I have tried experiments upon dilute solution of albumen and vibrios, from which it would appear to me that the dilute solutions of carbolic acid destroy the activity of the vibrios before they coagulate the albumen. The more diluted the solution of carbolic acid the more marked is the phenomenon. The sulpho-carbolates being crystalloids are more suitable for diffusion than the carbolates, whilst the residual carbolic molecule acts as if uncombined. In addition to the sulpho-carbolates of iron and sodium, I should suggest the use of the potash salt, which, from its action upon the skin and kidneys, would probably be useful. It is readily prepared.

"In seeking for a remedy for internal disinfectives of the blood, it is evident, from my point of view, that we should try to search into the substances which will produce in the blood the antiseptics slowly, but in a nascent condition.

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* On the 24th of June, when this paper was going through the press, this house was still free from any case of small-pox.

"As I have studied the subject of disinfection and atmospheric dust with some care for years, I thought that these observations might be of use from the very fact of being trammelled by the ideas of a chemist. Out of a great mixture often comes good compounds. I almost feel that we are in a degree neglecting our duty in not constructing committees of investigation upon such occasions as the present visitation."

Dr. Cameron said, as he had recently read a paper on this subject, he wished to make a few observations, more especially as he apprehended that the views Mr. Tichborne had put forward might appear to clash with those which he had submitted to the society. He (Dr. Cameron) did not at all doubt the efficacy of gaseous disinfection to a certain extent, but what he said was this—and he spoke from the results of his own experience—that gaseous disinfection, as ordinarily carried out, was totally inefficacious as a means of wholly destroying germs in a room. He held that the recent experiments of Chauveau—who occupied the first position as an investigator in this department of Medical science—and more recently the experiments of Dr. Burdon-Sanderson, one of the Medical Inspectors of the Privy Council and Professor in the Brown Institution, rather indicated that as a rule the contagious matter of zymotic diseases was deposited on solid substances. The great use of the disinfection at present employed was that it obliged people to open the windows and let in the fresh air. They all knew how well the Germans did everything in scientific and medical matters, and he would mention the results of their experience of disinfection during the visitation of cholera in Leipsic in 1866. The chemical professor, Carus, was appointed head disinfector of the town, which was divided into 100 districts, each of which had a separate inspector. Never was disinfection more thoroughly carried out. Every house in which cholera appeared was disinfected with chlorine gas. And what was the result? There had been thirteen outbreaks of cholera in Leipsic since the first appearance of the disease in Europe, and never was the attack so severe as in the year 1866, when disinfection was carried out in so careful a manner. It was the same in Stettin and Erfurth, where disinfection was carried out under the orders of the Government and by a staff such as we could not have in this country. His views had been adopted by the Public Health Committee of the Corporation. They had increased their staff, and now, instead of merely disinfecting a room with chlorine gas, they removed the paper, if there were any, from the walls, scraped off the old whitewash, and whitewashed the walls afresh. If the whitewash did not destroy the infectious matter, at all events it imprisoned it. By the use of common water and whitewashing more good would be effected than by the circulation of thousands of feet of chlorine gas.

Dr. Hayden said he was particularly pleased at hearing Mr. Tichborne's paper read so soon after the paper of Dr. Cameron, which, with all respect to him, he thought missed the point. Dr. Cameron seemed to think the atmosphere could not be a medium for the conveyance of disease. That, however, he (Dr. Hayden) doubted. Dr. Cameron, that evening, said it would be sufficient to cleanse the walls, but if it be true that the air was impregnated with organic matters, every one of which might be the medium for conveying the *morbis*

materia of disease, he could not see how that could be neutralized without acting on the whole body of air in the room. He was glad to hear this practical paper of Mr. Tichborne's, because the opinions urged in it had fallen in with his own preconceived views.

Mr. Tichborne, in reply, said that Dr. Cameron, who had not heard the whole of his paper, had mistaken the drift of it. His theory was that the contagious matter of small-pox was a substance which was carried on the atmospheric rafts and deposited on the clothes. Before it could be deposited on the clothes it must have passed through the air; and he proposed to act upon it by gaseous disinfectants. Dr. Cameron believed in the germ theory of disease generally. There was evidently something in it; but if he believed in it, one thing was self-evident—namely, that non-volatile disinfectants could do no good, for they could not touch it; but volatile disinfectants would be found effectual; and this was wonderfully borne out by the case he had stated that evening, which was only one of several similar cases that had occurred under his own observation.

Art. 126.—*The Prevention of Pitting in Variola.*

By Alonzo L. Leach, M.D., of Philadelphia.

(*Philadelph. Med. Times.*)

Dr. Leach wishes to call attention to the carbonate of lead, the ordinary white lead of the paint-shops, which he has used in several cases of confluent variola with success. His mode of using it is to add to the paint a sufficient quantity of linseed-oil to make it of the consistence of rich cream, and then, by means of a camel's-hair pencil, apply it to the face. This he has done in the vesicular stage of the eruption, but perhaps it might be well to use it even earlier—in the papular stage. A few applications form a complete covering to the face, at once excluding all possible access of air or light. It is soothing to the parts, allaying irritation and quieting inflammation, and in those cases where he has used it it has been effectual in preventing the pitting. It commends itself from its easy mode of application, its cheapness, the readiness with which it is obtained, and from the fact that it disposes of the dark room so religiously observed by many practitioners, and that a few applications render all future interference unnecessary.

He adds that for the delirium of the disease the bromide of calcium is of signal benefit. All of the bromides would be equally serviceable, but that of calcium, containing a larger per cent. of bromine, is more decided in its action.

Art. 127.—*Alcohol as a Nutritive Agent.*

By H. P. Bowditch, M.D.

(*Medical Press and Circular*, July 25.)

We find in the new number of the *Boston Medical and Surgical Journal* a paper on this subject, read before the Boston Society of Medical Sciences, by Dr. H. P. Bowditch, in which he observes that the experiments of Dr. Subbotin were performed on rabbits enclosed in an apparatus by means of which the exhalations of the skin and lungs could be examined for alcohol. The urine was also collected and examined for the same substance.

The experiments showed that in the first five hours after the introduction of 3·45 grammes of alcohol into the stomach of a rabbit, about two per cent. was eliminated by the kidneys, and four per cent. by the lungs and skin.

Experiments extending over a greater length of time led to the conclusion that, usually, during twenty-four hours at least sixteen per cent. of the injected alcohol leaves the body in an unchanged condition (or perhaps as aldehyde), and that besides this elimination by lungs, skin, and kidney, a portion of the alcohol is oxidized in the organism. Although by this oxidation force must be set free in the organism, the author does not consider that alcohol is on that account to be regarded as a nutriment, for the functions of the animal body depend for their performance, according to Dr. Subbotin, upon the transformation of living material—*i.e.*, of the constituent parts of the body—and not upon the decomposition of matter foreign to the body.

In a note appended to Dr. Subbotin's essay, Professor Voit expresses himself as follows: "I do not agree entirely with Dr. Subbotin in his views on the importance of alcohol as a nutriment. I define a nutriment as a substance which is capable of furnishing to the body any of its necessary constituents or of preventing the removal of such constituents from the body. To the first class belong such substances as albumen (since it can be deposited as such in the body), or fat or water or the mineral constituents of the body; to the second class belong such substances as starch, which hinders the loss of fat from the body. If a nutriment is defined as a substance which by decomposition furnishes living force to the body, the definition would not be exhaustive, for it would exclude water and the mineral constituents of the body. Alcohol must, therefore, to a certain extent, be regarded as a nutriment, since, under its influence, fewer substances are decomposed in the body. It plays in this respect a similar (though quantitatively very different) part to that of starch, which also protects fat from decomposition and, when taken in excess, causes deposition of fat in the organs or fatty degeneration. If a part of the alcohol is decomposed in the body into lower forms of chemical combination it *must* give rise to living force, which either benefits the body in the form of heat, or may perhaps be used for the performance of mechanical work; the same is true of acetic acid, which is also not to be considered as an ultimate excretory product, and

from which, therefore, in decomposition potential force passes into living force.

"It is another question, however, when we ask what importance alcohol has for us as a nutriment, and whether we take it in order to save fat from decomposition and furnish us with living force, in other words, to introduce a nutriment into the body. Since alcohol, when taken in considerable amount, causes disturbances in the processes of the animal economy, we cannot introduce it in quantities sufficient for nourishment, as we do other nutriments, and in the amount which we can take without injury its importance as a nutriment is too small to be considered. In this point, then, I agree entirely with Dr. Subbotin; we use alcohol not on account of its importance as a nutriment, but on account of its effects as a stimulant or relish."

Professor Voit's definition of a nutriment is rather more comprehensive than those usually given, but it has the merit of great exactness, and of leaving no doubt as to its applicability to any given substance. Whether this definition or any other be adopted, it is, of course, essential, as a preliminary to the discussion of the nutritive value of alcohol or any other substance, that we should define as exactly as possible what we understand by the terms "nutriment" and "nutrition."

Although, as Professor Voit says, alcohol cannot, under normal circumstances, be introduced into the body in sufficient amount to be of any importance as a nutriment without producing toxic effects, may it not be that in those morbid conditions of the system where large amounts of alcohol are borne without causing narcotism, the nutritive properties of the substance really become important, and that patients who are supported by alcohol through periods of great weakness or exhaustion are really nourished and not simply stimulated by it?

Art. 128.—*The Remedies for Tapeworm.*

By T. Spencer Cobbold, M.D., F.R.S.

(*Worms; a Series of Lectures on Practical Helminthology.* London. 1872. Pp. 178.)

"The remedies for tapeworm," Dr. Cobbold writes, "are male-fern, kousso, kamela, turpentine, panna, pumpkin-seeds, and pomegranate-root bark. The right administration of any one of these is likely to produce the desired result; but many other drugs have been and still are employed with more or less success. Patients have consulted me after trying five or six of the above-named remedies, to say nothing of others not worth mentioning. Some practitioners seem to think one vermifuge as good as another. Because they find santonin a useful remedy in threadworm, and almost a specific in roundworm, it by no means follows that the same drug is effective, or even of the slightest value, in tapeworm. When so many excellent tapeworm vermifuges abound, it becomes a waste of time to dwell on the virtues of second and third rate drugs, such as oxide of silver, tin, scammony, jalap, and various other drastic purgatives, which exert no poisonous influence

upon the worm. Dr. Shapter, of Exeter, has employed chloroform with success; at least, speaking of one or more cases thus treated, he says 'the cure was effectual and without distress of any kind.' Now, supposing it was really necessary to try several drugs in succession, I would recommend their adoption separately in the order I have just placed them. Of course, in no individual case will you ever be called upon to indulge in such a practice. Without asserting their actual relative value as tapeworm poisons, I give them a preference in the order in which they are here recorded. Probably, as I have elsewhere said, there is no better remedy for tapeworm than oil of turpentine, and yet its nauseous character, combined with the fact that it not unfrequently produces irregular and violent effects upon the nervous system, are circumstances always inducing me to substitute other drugs. From cases which have come under my notice, I have no doubt whatever as to the great anthelmintic virtues of turpentine."

Art. 129.—*Koumiss, Blanda, Syre, Sigre, or Airen.*

By James T. George, M.R.C.S.E., Keith, Banffshire.

(*British Medical Journal*, Sept. 21.)

For upwards of twenty years Mr. George has used as a restorative medicine the vinous liquid procured by the fermentation of cow's milk, and although a liquor has been for some ages employed by several tribes of Tartars as procured from the fermentation of mare's milk, it was with difficulty he could learn the particulars of the mode of preparing it. The method which the author has adopted in his own practice with success, and which was communicated to him by a Russian gentleman, is as follows.

Take of newly-drawn milk any quantity; add to it a little water, and pour the mixture into any vessel. Use as a ferment an eighth part of the sourest cow's milk that can be got—but at any future preparation a small portion of old koumiss will better answer the purpose. Cover the vessel with a thick cloth and set it in a place of moderate warmth. Leave it at rest twenty-four hours, at the end of which time the milk will have become sour and a thick substance will gather on the top; then with a stick, made at the lower end like a churn staff, beat it until the thick substance be thoroughly blended with the subjacent fluid. Leave it again at rest for some time; repeat the beating, after which pour it into a narrow vessel like a churn, agitate the liquor until it be perfectly homogeneous. In this state it is called *airen*.

Its taste, if properly prepared, ought to be a pleasant mixture of sweet and sour (agitation must be employed every time before use). When it is necessary to have it quickly made, heat the milk before applying the sour milk, and agitate every hour or half hour. By doing this it is obtained in twelve hours. If well secured in close vessels and in a cool place it can be kept a long time without injury to its qualities. If made in a glass vessel—that is to say, if it undergo fermentation in it—

it must not be more than two-thirds filled, in case the bottles burst. When it is bottled for keeping any time the bottles must not be full, and the corks must be fastened as lemonade in bottles.

In cases of general debility Mr. George has given it largely, with essential service, as a nutritive, and has found it of great use in typhoid fever, the patients using it for meat and drink. In a few cases no other remedy was used, young and old taking it. In nervous, dyspeptic, and hypochondriac subjects its use for some time has a powerful restorative effect, giving flesh and strength. Invalids, not only without disgust, but with a sort of pleasure, drink it in large quantities, and, even when they do so without headache or other unpleasant feelings, which the abuse of other fermented liquors produces. In pulmonary consumption, when cod-liver oil cannot be taken, Mr. George has found it (but at the same time using whisked cream) equally, if not more efficacious, in relieving cough and giving plumpness to the body. From its mild acid, its vinous spirit, and its oily qualities, he considers it to be a cooling antiseptic, a mild stimulant and tonic, and a valuable nutritient.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 130.—*Abstract of Lectures on the Surgical Treatment of Aneurism in its various forms, delivered before the Royal College of Surgeons of England.*

By T. HOLMES, F.R.C.S., Professor of Pathology and Surgery.

(*British Medical Journal*, June 15, 22, July 6, Aug. 3, 24, and 31.)

LECTURE I.

Mr. Holmes, after thanking the Council of the College for the honour of his appointment, proceeded to remark upon the great changes which had been made in the surgical treatment of aneurism since this subject had been brought before the College of Surgeons, forty-three years ago, by Mr. Guthrie, and which had necessitated a totally different view of the surgery of this disease from that which he took. Mr. Guthrie's teaching led to the inference that, with few exceptions, aneurisms which are not curable by the Hunterian method are not curable at all. But the success of pressure, as invented by the Dublin surgeons, of the rapid method of pressure under chloroform, of the flexion of the limb in popliteal aneurism, and of digital pressure, has given a new impulse to the search for milder methods of cure in the more accessible forms of aneurism. The same success has also led to the conclusion that there are no forms of aneurism, however near the heart, which are in their own nature absolutely incurable; and has accordingly stimulated surgeons to test the value of sundry plans newly introduced into practice for the cure of aneurisms situated on arteries which are inaccessible to operation. Such are galvano-puncture, distal ligature and distal pressure, manipulation, coagulating injection, the introduction of foreign bodies into the sac. None of these novel plans had as yet proved regularly successful; but it was intended to show, in this course of lectures, that some of them rest on a sound pathological basis, and that further experience will, in all probability, obtain success with them regularly in a certain proportion of cases—though the frequent connexion of internal aneurism with extensive degeneration of the arteries or disease of the heart forbids us to hope for anything like the success which is obtained in external aneurisms.

The main propositions to be sustained in this course of lectures were announced to be as follows:—

1. Aneurisms, of whatever form or however near the heart they may be, ought not to be regarded as incurable, but should be made the objects of definite methodical treatment, internal or external.

2. There is definite proof, from pathological anatomy and from surgical experience, of the curative influence of Brasdor's operation in innominate aneurism, and of its beneficial effects in some cases of aortic aneurism.

3. Arteries may be successfully tied and obliterated without their continuity being interrupted; and this modification of the ligature, whilst affording much security against secondary hæmorrhage, and thus much diminishing the danger of the operation in general, may very probably in future enable surgeons to deal successfully with cases in which it may be necessary to tie the first part of the subclavian (whether on the distal or the proximal side of an aneurism) or the innominate artery.

4. Galvano-puncture may be used with, at any rate, temporary benefit in thoracic aneurism; its use is not so dangerous as to render further trials of it inexpedient; and there is good hope that the method may be so far perfected as to make it a safe and regular plan for the treatment of thoracic, subclavian and other forms of aneurism.

5. Many cases, such as those in which ligature of the artery near to the heart has been resorted to for the cure of subclavian and subclavio-axillary aneurism, may be made amenable to improved methods of pressure.

6. Aneurismal tumours situated even as high as the lower part of the abdominal aorta, those of the mesenteric and other branches of the aorta, and of the iliac arteries, may be treated with success by rapid coagulation of blood under pressure; but this method is a dangerous one, and should not be used until internal treatment had failed.

7. There are cases of abdominal aneurism in which Mr. Syme's suggestion of reviving the old operation is worthy of further trial.

Instances were then adduced of the cure of aneurism of the aorta by the resources of nature, and others in which that disease had been cured and the patient restored to health by the enforcement of persistent rest and quiet, more particularly one under Mr. Stanley's care, related by Mr. H. Ludlow in the fifth volume of the *Pathological Transactions*, and one under the care of Mr. Joliffe Tufnell.* The spontaneous cure of innominate aneurism was also exemplified by a preparation from the Museum of St. George's Hospital.

The various plans of treatment for thoracic aneurism were enumerated. Short mention having been made of the injection of ergotine into the cellular tissue, and of the introduction of iron wire and other foreign bodies into the sac—plans which do not hold out much promise of success—the lecturer proceeded to discuss the internal or medical treatment of internal aneurism. This treatment, a modification of that of Valsalva, had been described by Abernethy and by Mr. Holmes himself, but has been methodized and brought to perfection by Mr. J. Tufnell. It should be the treatment always first put in practice in any case of internal aneurism, thoracic or abdominal, before the adoption of any more dangerous measures.

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* In his pamphlet on the *Successful Treatment of Internal Aneurism.*

Brasdor's operation was then discussed. After a short history of its introduction, Mr. Wardrop's reasoning was considered, by which he endeavoured to prove, not only that the operation will succeed where there are no collaterals between the sac and the ligature (which appears indubitable), but also that in innominate aneurism perfect consolidation may be produced by tying the carotid and the third part of the subclavian, even though all the four large branches from its first part intervene between the second ligature and the sac. This is opposed to the facts which we know (some of which were instanced) proving the very rapid development of the collateral circulation in man. Mr. Fearn's case* was admitted as proving that sufficient coagulation may follow this operation to produce a practical cure; but the radical cure of the disease—*i.e.*, the entire obliteration of the tumour by laminated coagulum, appears impossible under Wardrop's plan.

Turning from theory to the results of experience, these are twofold—viz., the pathological anatomy of cases where distal impaction of clot has occurred in innominate and aortic aneurism, and the history of cases in which Brasdor's operation has been performed.

The history of the case, previously alluded to, at St. George's Hospital, of spontaneous cure of aneurism of the innominate artery, was detailed, and the preparation (obtained after the man's death, four and a half years later from phthisis) exhibited. Cure had, in this case, been produced by impaction of clot in the carotid artery. This had caused the obliteration of the whole tumour, with the exception of a small channel by which the blood reached the subclavian artery. A drawing was exhibited, taken from a case where the carotid was tied on the distal side of an innominate aneurism, by Dr. Wright, of Montreal, which showed a condition of parts absolutely identical. Mr. S. Lane's and Sir W. Fergusson's cases of distal ligature of the carotid were also adduced in proof of the same proposition—viz., that the distal ligature acts in these cases in exactly the same way as the distal impaction of clot; that its natural (though not necessary) effect is to obliterate the carotid portion of the tumour, and that this may suffice to remove all symptoms of the disease. Again, cases were adduced from the Westminster, the London, and St. Bartholomew's Hospitals to show the effect of distal impaction of clot in the mouth of the subclavian artery, and to prove that in these cases the subclavian portion of the sac becomes obliterated, and that the distal ligature of the carotid artery would have almost certainly produced the obliteration of the tumour and saved the patient's life, which in two of the cases was lost by the bursting of the tumour into the windpipe and in the third from suffocation. The undeniable inference from these facts is that Brasdor's operation for innominate aneurism rests on a sound pathological basis.

LECTURE II.

Some preparations and histories of cases were referred to, showing that in aortic as well as in innominate aneurism the distal obliteration of one of the arteries leading out of the sac would be followed by the consolidation of that portion of the sac which used to be distended by the

* The preparation from this case is in the College Museum.

stream of blood passing up the occluded vessel. Reference was then made to Mr. Guthrie's objections to the distal operation. These were, first, that the distal operation when it cures does so by producing inflammation in the sac. It was shown that this rested only on the history of two cases in which suppuration in the sac had followed the operation. In one instance, however, there had been an interval of a year, and the suppuration evidently depended on accidental causes and not upon the operation; and it was shown that in the majority of successful cases of distal ligature, no inflammation has occurred. Mr. Guthrie's other objection rested upon an examination of some preparations in the Museum of the College; but it was shown that these preparations were not sufficient to support any definite conclusion.

The lecturer then proceeded to review the published cases of distal operation in thoracic aneurism, of which forty-three were tabulated. These were as follows: 1. Four cases of successive distal ligature of the carotid and third part of the subclavian. In one of these, Mr. Fearn's well-known case, the preparation and drawing of which were exhibited, a cure resulted—the aneurism becoming lined on all sides by firm coagulated laminæ, through the centre of which a channel remained for the circulation.

2. The second class consisted of eight cases, in which the carotid and subclavian artery were tied simultaneously. Two of these were strictly on Brasdor's method; the subclavian being tied in its first part as it leaves the sac. In one of these cases, Hobart's, the subclavian artery was said to have soundly united. The preparation was exhibited; but the subclavian had unfortunately been removed in making the *post-mortem* examination. The history, however, seems to prove the possibility of tying this artery successfully. In the six other cases comprised in this class the subclavian was tied in its third part. Mr. Heath's case was specially commented on, in which the patient derived great benefit from the operation and survived four years—the aneurism being aortic. Another case, under Mr. Holmes's own care, was related, in which the aneurism was innominate; but, the aorta being also affected, the operation failed. In this instance the arteries were tied with carbolized catgut and no ulceration had taken place leading to the division of the arteries.

3. The third class of cases were those in which the carotid only was tied. In eleven of these the aneurism was innominate. A drawing was exhibited from the case in which Dr. Wright, of Montreal, was the operator. Here the whole of the aneurism was consolidated, except a channel leading into the subclavian artery. The state of parts exactly resembled that of the spontaneous cure of an innominate aneurism exhibited in last lecture; and there could be little doubt that the patient would have been cured had he survived the operation. In seven other cases either the carotid or the subclavian was implicated as well as the innominate. In two of these the patient was perfectly cured. Mr. Evans's survived the operation more than thirty years, and Mr. Morrison's died suddenly from disease of the heart, having been perfectly cured of the aneurism, as proved by *post-mortem* examination. In four other cases the aneurism was aortic, mistaken for innominate; and in none of these did any benefit result.

LECTURE III.

The review of the table of cases in which the distal operation has been practised for thoraric aneurism was concluded. In seven cases the left carotid has been tied for disease known to affect the arch of the aorta, and the operation has proved beneficial in all except one, in which the patient died from the direct effects of the ligature. One case was especially referred to, now under the care of Dr. Cockle, in which the carotid artery was tied by Mr. Heath in February last, and the patient was shown after the lecture to those present. The growth of the aneurism has been materially checked, and the patient is now in perfect health and able to walk fourteen miles without fatigue. The table of cases concluded with two of distal ligature of the third part of the subclavian for innominate aneurism, by Wardrop and Broca, in both of which also the operation was beneficial. The following conclusions appear to be those justified by present experience on the subject of Brasdor's operation on innominate aneurism: 1. The distal ligature of the carotid alone, or in conjunction with that of the third part of the subclavian, cannot be trusted to produce the complete consolidation of the tumour. 2. The natural effect of the ligature of the carotid artery is to produce coagulation in the part of the sac directly connected with the mouth of that artery. 2. This may suffice, practically, for the cure of the aneurism when the subclavian portion of the sac is small, and shows no disposition to grow. 4. In other cases where the mouth of the subclavian is previously obliterated by impacted clot, the ligature of the carotid alone may effect a radical cure. 5. For these reasons it is better, in any case which appears to require distal ligature, to commence with the operation on the carotid alone, and afterwards to consider the propriety of securing the subclavian in either its first or its third part.

The question of the justifiability of operating on the first part of the subclavian was then considered. The operation has always hitherto failed from secondary hæmorrhage, and the possibility of repeating it justifiably depends on the possibility of obliterating an artery without dividing it. An historical summary was given of the attempts made with this view by John Hunter, Cline, and others, in the early days of the ligature; by Sir Philip Crampton, Mr. Porter, and others, with the *presse-artère*, acupressure &c. and with the silver ligature; and it was shown that, although occasionally successful, these methods had not hitherto proved trustworthy. The history of the catgut ligature was then traced from its first introduction by Sir Astley Cooper. Porta's experiments and operations were referred to, and the experience lately acquired with the carbolized catgut ligature was related. A preparation was shown in which Mr. Holmes had tied the carotid and subclavian arteries in the human subject with this substance; the patient having died from another cause about nine weeks after the operation. Both arteries were undivided; the subclavian permanently closed by organized tissue, the carotid obstructed by clot. The collateral circulation during life had hardly been developed to so great an extent as usual; the pulse being only very faintly perceptible in either the radial or the temporal,

thus showing that the trunks were really obliterated. This case furnished anatomical demonstration of the possibility of tying arteries without subsequent ulceration, the material of the ligature being subsequently absorbed. The reason for the failure of catgut ligatures in the hands of the older surgeons appears to be, that the wounds were not treated so as to produce rapid consolidation of their deep parts, and possibly the ligatures were not properly prepared. If subsequent experience prove it to be generally possible to secure this result of tying an artery, it might be justifiable to operate distally on the first part of the subclavian artery, though the chance of finding it diseased would render the operation very dangerous. Reference was made to the uncertainty of diagnosis between innominate and aortic aneurisms; and it was suggested that the indications for operation in cases of supposed innominate aneurism should be drawn from the progress of the case—that is from the apparent extension of the sac up the course of the carotid artery and towards the trachea. With respect to ligature of the left carotid for aortic aneurism, it appears also to be beneficial in the same way—that is, by obliterating the carotid and the portion of the sac through which the stream passed into the carotid.

The next subject treated of was galvano-puncture, and it was shown that by the galvanic current clots of more or less solidity could be formed in an aneurismal sac. It was also shown, by reference to a case of subclavian aneurism under the care of M. Abeille, that these coagula may ultimately attain sufficient firmness to obliterate the aneurismal sac. At the same time it must be allowed that such coagula are frequently not stable, but soften and melt down again into the blood-stream, thus rendering the operation nugatory. Further experience is required on many of the most essential details of this method; and these ambiguities and uncertainties form a valid ground for rejecting the operation—at least for the present—in any case in which the artery is fairly accessible above the tumour.

LECTURE IV.

Galvano-Puncture in Thoracic Aneurism.—It was shown that in thoracic aneurism growing against the chest-wall, death is often the result of inflammatory action between the resisting chest-walls on the one hand, and the growing sac on the other. This may possibly be stopped, if the blood in the external portion of the sac can be firmly coagulated by the galvanic current, even though it should be impracticable to consolidate the whole tumour. This point was illustrated by a preparation in which the aneurism had perforated the parietes, and formed a large secondary sac under the skin. A table was produced from Signor Ciniselli's work, showing the results of all the operations of this kind hitherto practised for thoracic aneurism, these results being much more favourable in the last few years than they had been when the method was new. Several cases have occurred in which the operation has been followed by an interval of health, extending in two cases over two years, in another twenty-one months, and in a fourth over a year. There is no evidence of absolute and permanent cure in any; and, in fact, the general coincidence of extensive atheroma renders relapse

probable in aortic aneurism, even if the first tumour can be entirely consolidated. Still, it is argued, the check to the growth of the aneurism anteriorly puts the patient in better condition for the internal treatment after Mr. Tufnell's plan. The question, then, is the same as in other surgical operations undertaken for the treatment of disease certain, or almost certain, to recur—viz., whether the benefit produced, allowing it to be temporary, was worth the risk incurred. This can only be answered by experience, which hitherto seems to prove the affirmative.

The dangers of electro-puncture are chiefly from the inflammatory reaction produced in the sac and surrounding cellular tissue, from the tendency to gangrene of the punctures, and from the liability to embolism. The first may probably be diminished by coating the superficial parts of the needles with vulcanite, after Dr. Duncan's method. The second, Signor Ciniselli proposes to obviate by passing the positive stream through the needle for a short length of time before applying the negative pole. The last danger proceeds probably from the too great softness and instability of the clots formed by galvanism. This is also a frequent cause of relapse in cases where the pulsation has been temporarily suspended by galvanism. The best plan for avoiding it appears to be to use a weak continuous current for a very considerable length of time; but further experience is necessary on this point. Instances were mentioned proving that death, when imminent from the rupture of the tumour, may sometimes be averted for the time by coagulating the blood by means of the electric current; and, on the whole, it was urged that this method of treatment deserves more extended trial in thoracic aneurism presenting externally, and that it should be used at a period before the external growth of the tumour has reached such an extent as to make the disease incurable.

The treatment of subclavian aneurism by surgical operation was shown to have been hitherto hardly less unsuccessful than that of innominate aneurism. The Hunterian operation on the innominate, or the first part of the subclavian, has hitherto been practised in about twenty-eight cases, only one of which on the innominate proved successful, and that only after repeated secondary hæmorrhage. The ligature of the second or third part of the subclavian, which can only be done in aneurisms that are as much axillary as subclavian, has been practised in twenty-one cases with only nine recoveries. The distal ligature appears out of place here, since it throws the stress of the collateral circulation on the diseased part of the vessel, and is therefore more adapted to increase the aneurism than to check its growth. It has been practised four or five times with uniformly fatal result. To all these failures seven cases are to be added in which the operator was unable to tie the artery, and in one of these manipulation of the parts seems to have produced the consolidation of the aneurism, which was spontaneously cured. The possibility, however, is not to be lost sight of, that by improved methods of deligation in future, whereby an artery may be tied without its subsequent division, the operation on the innominate or first part of the subclavian may be justifiable if those arteries can be found healthy. But preparations of this disease show that very commonly the artery or arteries nearer the heart are extensively diseased. This was illustrated

by Mr. Collis's case from the College of Surgeons of Ireland, and Mr. O'Reilly's from the Richmond Hospital, Dublin.

Another interesting question is, whether in some cases the second part of the artery might not have been tied instead of the first; a much less dangerous operation. A preparation of Mr. Liston's appears to show that this would sometimes be feasible. The second part of the artery should also be tied in cases where the third part has been exposed and found diseased. All these operations, however, for ligature of arteries in subclavian aneurism must necessarily be exceedingly dangerous, and this renders it the more necessary to seek for some treatment not involving cutting operations. It seems doubtful at present whether the first part of the subclavian artery can be effectually compressed for the length of time necessary to cure an aneurism situated lower down; but a trial of this method under chloroform would be advisable in appropriate cases. In the subclavio-axillary form compression may be often successfully used. This is proved by a case recently published by Mr. Poland, and by one of Mr. Gay's still under treatment; and it is noted in several of the published cases of subclavian aneurism that the pulsation of the tumour could be stopped by moderate pressure. Direct compression may perhaps assist in the cure.

LECTURE V.

The following points were proved regarding subclavian aneurism in the last lecture—viz., that such aneurisms are usually of small size, of tubular form, and connected with extensive disease of the artery on the proximal side; that the Hunterian operation rarely succeeds even on the third part of the artery, and has never been successful on the first, and that some more profitable treatment must therefore be sought for; that in some of the cases where the first part of the artery has been tied, the second part might possibly have been secured; and that compression, which has been occasionally used with success, deserves a more extensive trial. It remained now to consider the more dangerous plans of galvano-puncture and manipulation. The history of manipulation since its introduction by Sir William Fergusson was given; showing that in seven cases in which it has been used, five of them being cases of subclavian-aneurism, a cure was effected in one of the subclavian and one popliteal, and in none was there proof of any serious mischief; from which the inference was drawn that the method was one which may be rationally used in the cases not amenable to the ordinary resources of surgery. The same may be said about galvano-puncture, which also has been used with success, although in the majority of cases the clot has proved unstable and has broken down again, and in one recent case death has occurred from embolism. Amputation at the shoulder-joint, it was considered, ought, in the present state of our experience, to be reserved for cases in which gangrene is either imminent or has set in.

Abdominal aneurisms were divided into those which affect the abdominal aorta or its branches as high as the pancreas, those of the lower part of the abdominal aorta, and those of the iliac arteries. It was remarked that all these aneurisms are susceptible of spontaneous cure; and

that in other cases such aneurisms progress very slowly, a remarkable instance of which was related in the person of a well-known Irish surgeon. An instance was also related of the consolidation of an iliac aneurism during confinement to bed, published by Mr. Joliffe Tufnell. Such instances show that surgeons should not be too eager to resort to dangerous methods of treatment, but should try first to effect the cure of the aneurism by internal treatment. This having failed, we must consider the surgical treatment of the above three classes of tumours. First, aneurism situated as high as the pancreas involves either the trunk of the aorta or one of its branches, usually the superior mesenteric. Those situated on the trunk of the aorta are inaccessible to any surgical measure except distal pressure or ligature. Distal pressure was used lately by Mr. Bryant in a case of aneurism at the root of the cœliac axis. The pressure produced death by contusion of the small intestine, setting up enteritis and peritonitis. A considerable amount of coagulum was found in the aneurismal sac. Still the ultimate cure of the aneurism, if the patient had survived, seems very doubtful; and the propriety of using this method can hardly be said to be established. Theoretically, there seems little probability of cure, since the collateral circulation must go on through the portion of artery involved in the disease. Nor does distal ligature hold out any hopes of cure.

The subject of mesenteric aneurism was next discussed. This is less uncommon than is generally supposed; and some examples of it were brought forward—one in a patient still under observation at St. George's Hospital, and others from pathological collections &c. In some of these cases the aneurism during life appears limited, rounded, and movable; and the idea might occur of treating it by the old operation of laying the sac open, the circulation being commanded by a tourniquet on the abdominal aorta. The specimens, however, showed that very commonly the tumour runs up by a flask-like prolongation under the pancreas into the trunk of the aorta, rendering such an operation impracticable, and rendering the application of pressure also very dangerous, from the probability of contusing the upper portion of the thin sac. There are, however, a few cases of mesenteric aneurism in which the tumour is more limited, and which would probably be curable by pressure; which plan of treatment ought, therefore, to be cautiously applied in any appropriate case.

The second class of abdominal aneurisms are those affecting the lower part of the abdominal aorta, and it was an aneurism of this sort which was cured by Dr. Murray, of Newcastle, in his original trial of compression. This is the only case in which it has been proved by dissection that an aneurism seated above the bifurcation of the aorta has been cured. Mr. Durham has published a case in which he believes that he has effected the same thing; but the patient is still living. A preparation and diagram from Dr. Murray's case were exhibited.

These cases show the feasibility of curing abdominal aneurism by rapid pressure under chloroform; but the propriety of attempting its cure by gradual pressure without chloroform ought not to be lost sight of, as originally suggested by Mr. Holmes before the occurrence of Dr. Murray's case. This plan is free from the dangers of rapid compression, and might be trusted to succeed, though not very frequently.

The third class of aneurisms are *iliac*. It was in reference to these that Mr. Syme proposed to revive the old operation in the abdomen. The history of this proposal was given; and it was shown that some older surgeons—viz., Velpeau, Scarpa, Desault, and Roux—had proposed or applied the old operation in the axilla and in the groin. And Mr. Skey and Sir James Paget had operated in this way in rupture of the axillary artery. Mr. Syme, however, was no doubt original in his proposal to treat an iliac aneurism in this way; and his partial success in the operation which he performed was rendered possible by his employing the aortic tourniquet. Sir Astley Cooper had, it is true, attempted to carry out the same operation, having the aorta compressed by two assistants; but he failed to find the artery. The reasoning on which Mr. Syme based his proposal assumes that in every aneurism there is a definite point at which the artery opens into the aneurism, that the sac travels along the arterial wall, and that the portion of the wall of the artery thus included in the aneurismal sac is healthy. On the other hand, Mr. Henry Lee asserts that in the majority of aneurisms there is no such definite point of communication, and that an attempt to operate in the manner prescribed by Mr. Syme would usually terminate in a failure such as occurred to Sir Astley Cooper from that very cause. This question has to be discussed in the next lecture.

LECTURE VI.

The propriety of performing the old operation for abdominal aneurism depends on the answers which we can give to the following questions: First, is it true, as Mr. Syme says, that in every aneurism there is only a limited portion of the vessel contained within the sac or embraced by its wall? Secondly, is that limited portion capable of supporting the ligature and taking on reparative action? Thirdly, can the operation be performed with confidence on the surgeon's part that he will be able to complete it? And, finally, allowing that this is so, is it preferable to the other ways of treating a given case? Diagrams were exhibited showing that occasionally an aneurism has the precise form which Mr. Syme regarded as universal, but that in a very large proportion of the specimens in our museums either there is disease of the portion of artery near the opening, or there is a large tubular sac without any definite commencement of the aneurism at all, or there are such important parts—*e.g.*, veins, nerves &c.—matted to the sacs as would render it impossible to lay it all open; or the artery running through the sac is so completely incorporated with it that it would be exceedingly difficult in an operation to find it. And, in abdominal aneurisms especially, it was shown that these latter forms of sac are more frequent than in other regions. Hence, even judging from dissected specimens, it would seem that Mr. Syme's operation would very often be extremely difficult, if not impracticable; and in the living body there would be many additional difficulties which do not appear in a dissection. From all this it seems that Mr. Syme was wrong in believing that he had proved the superiority of the old method over that of Hunter. Besides, it seems, both from Mr. Syme's and Sir Astley Cooper's operations, that the method can only be used in cases where the abdominal

aorta might be compressed. We must, therefore, answer the above questions in the negative, and allow that the preferable method of treating iliac aneurism, as a general rule, is compression. But in cases where compression has been tried and failed, as in a case published a few years ago by Mr. Hargrave, of Dublin, in which he tied the iliac artery, it seems that the operation recommended by Mr. Syme is worthy of trial; for, although exceedingly dangerous, it may be trusted to succeed in a certain proportion of cases; and the Hunterian operation, as practised upon the common iliac, is shown by past experience to succeed so very rarely that it is worth giving a trial to the other method. Mr. Hargrave's case was referred to, and the preparation from it was produced as an instance in point. Here the aneurism was of the tubular variety, and communicated also with the external iliac vein. It seems, however, that, with a very long incision, both ends of the artery and the venous communication which was known to exist might have been discovered and commanded; and in a less complicated case the operation would of course be proportionately easier.

The method of cure by rapid compression was next discussed. It is impossible to deny that coagula may be formed in a few hours, or even a shorter period, by the total suspension of circulation through an aneurism, which may acquire sufficient solidity to obliterate it permanently. This, however, does not uniformly occur; nor has any proof been given that the method of rapid or total compression is more successful generally than the method of gradual or partial compression formerly in use. In the abdomen, rapid or total compression cannot be carried out without serious danger. This danger depends partly on the risk connected with the protracted administration of chloroform, which is usually, though not always, necessary; partly on the interference with the circulation produced by the pressure, whether from interference with the action of the diaphragm, or from compression of the great sympathetic centres; partly on contusion of the viscera, pancreas, intestines &c.; partly on contusion of the secondary branches of the aorta and vena cava; partly on renal congestion, due probably to pressure on the renal vein. The reality of these dangers was illustrated by three fatal cases which have recently taken place in London, and by the symptoms of others in which the pressure did not prove fatal. These facts show the desirability of attempting the cure of such aneurisms by milder measures, if possible. At the same time, the cure of abdominal aneurism by pressure is one of the greatest and most brilliant achievements of modern surgery, and is the only one of the modern methods treated of in this course which can be said to have been undoubtedly successful. The other methods, such as distal ligature, galvano-puncture, manipulation &c., applied to thoracic aneurisms, are doubtful remedies for diseases which are in themselves almost incurable; but compression is not a more doubtful remedy than the ligature; and abdominal aneurism is a far more curable disease, and much less frequently associated with extensive degeneration of the circulatory system, than thoracic aneurism.

The lecturer then announced that, if he should deliver the course of lectures on surgery another year, he would speak of the surgical treatment of external aneurism.

Art. 131.—*The Origin of Cancer.*

By Campbell De Morgan, F.R.S., Surgeon to the Middlesex Hospital.

(*The Origin of Cancer.* London. 1872. Pp. 87.)

From the following extract it will be seen that Mr. De Morgan regards cancer in its early stages as a local disease, either with or without a pre-existing constitutional tendency :—

"With regard to the general contamination of the system by cancer—the cancerous cachexia—this, as has been said, is not a primary condition; it does not occur until the disease has made considerable advance; it may not occur at all. Cases are numerous of patients having open cancer for years without any appearance of being the subjects of serious disease; for they neither lose flesh nor appetite. Again, patients often die from unulcerated cancer, especially of the internal organs; wasting away and becoming exhausted, without showing the characters of the cancerous cachexia. But they also die in the same way from the internal development of enchondroma and fibro-plastic disease. It is in the cases of ulcerated cancer that we see this cachexia most strongly marked. And no doubt, in these cases the whole of the fluids of the body become contaminated; the continual absorption of so foul a discharge as is then present would quite account for this. We know that the continual discharge from an unhealthy ulcer or a foul abscess will induce destructive poisoning of the system; and we can readily conceive that the discharge from a cancerous ulcer will be far more poisonous, and vitiate the blood to a greater degree and possibly in a special manner. All that can at the most be shown is that when cancer is formed, and has grown to a certain extent, it may become a source of contamination to the system; but it does not afford the slightest confirmation to the view that the primary seat of cancer is in the blood. Nay, it is evident that this cancerous cachexia must be something very different from any supposed blood-condition which precedes or accompanies the earlier stages of the disease. For, as we have seen, the cancer may exist for years, and no cachexia manifest itself; but if the cachexia once appear, death within a short time is inevitable. It is quite clear, then, that this vitiated state of the blood, and indeed we may say of all the tissues of the body, is in no sense, or at any time, the cause of the primary development of cancer, but is always the result of the advanced progress of the disease in time or extent. As a rule, we do not find any special tendency to new growths, even though the system be poisoned by this absorption of effete cancer elements. The expectation of finding this cachexia, as a diagnostic sign of the disease, is fraught with most serious evil.

"The general conclusion at which I should arrive is, that in some persons and in some parts there is a tendency, local in its origin, to the formation of tumours. That this tendency may in some have been implanted in the tissue, even in its embryonic condition, though the actual development may not take place till years after birth; in others, although there may be a disposition to morbid growth, the actual tumour

will not be developed unless under some irritation. That the morbid growth having once taken place it will remain localized or become diffused in proportion to the facility with which its elements can be taken up and carried off by the structures amongst which it lies. That the period during which these elements may remain dormant is indefinite. That, save in degree, there is no real difference between the malignancy of cancer and that of some other forms of tumour, and that even the line between malignant and non-malignant growth is not clearly defined. I should place cancer, then, at the top of a scale, at the lowest point of which might be placed the simplest form of outgrowth identical in structure to the affected parts."

Mr. De Morgan goes on to say :—

"If the surgeon consider the case a proper one for operation, whatever be the mode he may fix on, there are two positive rules which, if there be any truth in the views of cancer here maintained, he must obey—1, to operate early; and 2nd, to operate thoroughly. Reasons have already been given why an operation should be done as early as possible. There can be no reason, according to any ordinarily received opinion on cancer, why a cancerous tumour should not be removed as soon as discovered. There are many reasons why it should. Given a defined tumour in the breast of a woman over thirty, and, however negative other signs may be, sooner or later we may be sure that an operation will be required. There may be cases of general or partial enlargement of the breast with pain and hardness which, while in the end they may prove cancerous, yet may result from simple chronic irritation, and which subside under proper treatment: such cases it will be right to watch. There may be cases in which a lump in the breast presents characters which leave a surgeon in doubt whether he has to deal with a tumour, or a deep abscess, or a cyst. Here exploration may be necessary; and if this reveal the existence of abscess or cyst, simple evacuation of the contents may be all that is required.

"But if tumour be undoubtedly present, such as sarcoma, or colloid, or adenoma, it is true that no harm might come from waiting, though no good would be done. But suppose it to be cancerous; what irreparable mischief may not ensue from delay? To-day the glands may be free, to-morrow they may be infected; not to such an extent as to attract notice, but not the less to be the nidus of future cancer growth. To-day all existing disease may be within the range of our operation; to-morrow disease may be distributed far beyond. Yet what is more common than for a surgeon, when a patient has pointed out to him 'a lump' in her breast, and he has found that she is in good health, that there is no puckering of skin or retraction of nipple, and that the glands in the axilla are not enlarged, to assure her that she need not be uneasy, but that she should watch the swelling, and apply ointments, lotions &c. A month or two afterwards, perhaps, she is seen again; and then there is adhesion of skin and a small hard gland in the axilla. What does this puckering of skin &c. imply, save that the influence of the disease, or rather the disease bodily, has been spreading in all directions, and that possibly it may have extended beyond reach, even if it could be detected. Are the chances of success equal under these altered circumstances? I shall believe that only when I find that leaving behind a

visible piece of cancer structure in an operation is of no consequence. So insidious is cancer, that I suppose no patient has ever had a suspicion of its existence, and no surgeon or pathologist has ever seen it in its strictly primary stage. Can it be doubted that if removed at that time the chances of re-appearance would be enormously diminished?

"I should say, then, that in the case of a doubtful tumour the surgeon ought not to wait till its true character has revealed itself; but that he should proceed forthwith to ascertain its nature by exploration, and be prepared at once to remove it if it turned out to be cancer, or any disease likely to become serious. He would save his patient much risk and much anxiety."

ART. 132.—*On Acupressure, Acutorsion, and Torsion, especially in Amputations.*

By Professor BILLROTH.

(*Wiener Medicinische Wochenschrift*, xxi. 43; *Schmidt's Jahrbücher*, No. 4, 1872.)

Professor Billroth has applied these methods in the occlusion of about 200 arteries, and in fifteen instances to the femoral, in some of which the thigh was amputated high up. There was no opportunity of applying any of the methods in amputation at the hip-joint, and Professor Billroth does not think that any one is suitable in amputation at the shoulder. Acutorsion was more frequently practised than acupressure. In one instance only was the removal of the needle followed by hæmorrhage, the cause of which was faulty introduction of the needle; the artery, which was the brachial, was compressed by the proceeding of acupressure alone. Practically, acutorsion is the preferable proceeding; it is safe, and in amputation easily applicable, but cannot be substituted for the ligature in every case. With regard to the material of the needle, Professor Billroth has concluded in favour of gold, which, for short needles of moderate strength, is to be preferred to any other material.

Simple torsion has been tried by Professor Billroth in excisions of the breast, but seldom with any good results. The cause of these failures is the absence in excision of the mamma of conditions favourable to this method; in torsion the end of the vessel should be well isolated and the stump of the artery be seized by firmly compressing forceps, and, finally, the end of the artery must be at some distance from the origin of the nearest branch. Professor Billroth has frequently practised torsion with very good results in amputations at the leg, foot, arm, and fore-arm, and applied it to the majority of the arteries in amputation of the thigh. In one case only did he find subsequent hæmorrhage; this was from the posterior tibial artery.

Much traction and twisting of the artery produce a long thrombus, but are attended with this disadvantage, that most of the twisted portion of vessel becomes necrosed.

Extended thrombus formation and the danger of necrosis forbid the practice of torsion in venous hæmorrhage, which may be readily controlled

by ligature or acupressure. In amputations below the knee and elbow torsion is a very reasonable proceeding, so long as no branch springs immediately above the divided end of the artery.

Art. 133.—*Treatment of Traumatic Neuralgia.*

By S. Weir Mitchell, M.D., Physician to the Philadelphia Orthopædic Hospital and Infirmary for Diseases of the Nervous System.

(*Injuries of Nerves and their Consequences.* 8vo, pp. 377. London: Trübner and Co. 1872.)

In the treatment of traumatic neuralgia the author says:—

"The pains of traumatic neuralgia are so terrible that we are usually driven at once to the use of narcotic hypodermic injections, without which it would often be impossible to relieve such cases. In neuralgia, from what we call, for want of a better term, irritation of nerves, there is reason to believe that some of the opiates, in the form of hypodermic injection, may prove more or less curative in their action; but where, as in most traumatic neuralgias, there is manifest organic alteration of the nerve, such agents are chiefly of service because they relieve pain, and thus enable us to bridge over, so to speak, the many months of torture which are needed to bring the nerve back to health again, or to afford time for electrical or other treatment. . . . . At the present time this mode of using narcotics has grown into common use, but even yet it is scarcely estimated at its full value. In the wards for nerve wounds in the U. S. A. Hospital it is almost the only plan of treating severe neuralgic pain; so that twice or thrice a day the resident surgeons passed around these wards with their narcotics and hypodermic syringes, seeing, as a physician observed to me, anguish and troubled faces before them, and leaving behind them comfort, and even smiles.

"During one year at least forty thousand doses of various narcotics were administered without an accident, and in certain single cases upwards of five hundred hypodermic injections were used; so that, if there were no other evidence of the innocence of this mode of medication, our own experience would have been amply competent to settle the question. I have had large opportunity of studying, in traumatic neuralgia, the comparative merits of narcotics used by the mouth or under the skin, and I have no hesitation in stating my opinion that the latter method is not only the more effective, but also the less harmful constitutionally. For the easing of neuro-traumatic pain we tried, in turn, the whole range of medicines known as narcotics, such as conia, hyoscyamus, daturia, atropia, and morphia. None of them, save the last, seemed, when singly used, to be of the slightest value; and one by one they were laid aside, until, in the vast mass of cases, the salts of morphia alone were employed. A careful series of examinations showed very distinctly the trifling influence of atropia upon this form of pain. Several cases of intense neuralgia from wounds were treated with injections of sulphate of morphia under the skin in rising doses. When we learned

the amount needed to give entire ease, we used in its place next day a full dose of atropia, our largest injection having been one-fifteenth of a grain. The most absolute failure attended these efforts; so that, without denying to this latter drug the power ascribed to it of relieving certain neuralgias, I am sure that it is in the traumatic species simply useless. The morphia salts, on the other hand, are invaluable. For hypodermic use I usually employ at first one-fourth of a grain of the sulphate, but I have given as much as a grain and a half twice a day. When continuously used it is curious that its hypnotic manifestations lessen, while its power to abolish pain continues; so that the patient who receives a half grain or more of morphia may become presently free from pain, and yet walk about with little or no desire to sleep. The ability to lessen pain is not, therefore, of necessity connected with the sleep-compelling potency. Where, however, the latter is inconveniently felt and we desire the former only, it is possible to attain the end in view by using with the morphia a certain share of atropia. Thus, if we inject half a grain of sulphate of morphia, and with it the thirtieth of a grain of sulphate of atropia, the anæsthetic force of the morphia will rest unaltered, but the tendency to sleep will be greatly diminished. The views here set forth were reached after long and careful experiments on large numbers of men, and seem to justify the practice of using atropia and morphia together. As regards the place of injection, I agree with most observers that it is generally of little moment, the effect being the same whether it be thrown into the affected limb or into a remote part. The single exception to this I shall presently mention."

This exception occurs in the treatment of the burning pain, or, as it is called, causalgia, for which—

"A vast number of means were tried to ease or cure, but the one essential for comfort was the use of water dressings, which were unceasingly removed, the sufferers carrying a bottle of water and a sponge and keeping the part covered. I have never known a man afflicted with causalgia who did not learn very soon the use of this agent, and I never knew one who could be induced to exchange it for any other permanent dressing. Further relief was given by hypodermic injections of morphia used twice a day, and injected into the tissues of the affected part. I am well aware that this is not in accordance with recent views as to the equal efficacy of injections at points remote from the seat of the pain, but I am well satisfied that in causalgia something is gained by the local proximity. Numerous experiments were made to determine whether as full relief might not follow injections at distant points, but although the injecting of the burning hand produced in many cases torture, the patient was sure to insist upon it after a few trials of other localities."

Art. 134.—*On Traumatic Jaundice.**

By M. Verneuil.

(*Gazette Hebdomadaire*, No. 36, 1872).

The author distinguishes etiologically two kinds of traumatic jaundice: 1. A direct traumatic jaundice resulting from a wound or an operation involving the liver itself. 2. Indirect traumatic jaundice, which occurs after a wound or an operation upon some more or less remote organ.

Cases of traumatic jaundice of the first kind present no difficulty. They are admitted and recognised by all authors. Their gravity is subordinated to that of the initial lesion.

Of the second kind of jaundice M. Verneuil describes two varieties: one caused by septicæmic changes in the blood and constituting pyæmic jaundice, which is but a symptom of purulent infection; another which is without doubt due to a perversion of nervous action, and to which the author proposes to give the name of *reflex* traumatic jaundice.

This last-mentioned variety of indirect traumatic icterus, concerning which little has been hitherto known, forms the chief subject of M. Verneuil's contribution.

In the first place the author details three cases which served as a starting point of his researches. The first case was of a man twenty-five years of age, who on the fifteenth day after amputation of the leg suffered from gastric disturbance and jaundice, with a characteristic slackening of the pulse (to fifty pulsations) and a marked lowering of the axillary temperature. The patient recovered.

The second case was one of an English lady who, on the second day after an operation for anal fistula, presented all the symptoms of hepatic colic with jaundice. This patient had for some time previously suffered from congestion of the liver, which had manifestly predisposed to the jaundice. The patient recovered.

The subject of the third case was an old drunkard, who had cirrhosis of the liver, stricture of the urethra, and a urinary abscess. M. Verneuil incised the abscess and performed external urethrotomy. On the day after the operation severe jaundice, accompanied by anasarca and adynamic symptoms, came on. The patient recovered.

The two last facts justify one in concluding with M. Verneuil that an antecedent organic lesion of the liver would be the necessary predisposing condition for the production of traumatic icterus, whilst this preliminary morbid change is not implicated in the pathology of direct traumatic jaundice, nor in that of pyæmic jaundice.

The diagnosis of each of the three varieties of traumatic jaundice is generally easy. In the first it suffices to make out the direct lesion of the liver; in the second variety one will observe the symptoms of pyæmia; in the third one would have to examine the circulatory apparatus and thermometric tracing, which would constantly give reduction of the pulse and depression of temperature.

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* Communicated to the Académie de Médecine.

Although generally a serious lesion, the prognosis of jaundice consecutive to wounds varies much according to the nature of the complication. The gravity of direct traumatic jaundice will depend on the disorder produced in the liver by the wounding agent. Pyæmic jaundice is always very serious, like the general malady of which it is but a symptom. Reflex jaundice seems to be a tolerably benign affection, except in those cases where the antecedent lesion of the liver is of a nature, such as cirrhosis, to lead to a fatal result.

Reflex icterus does not apparently modify unfavourably the reparative processes in wounds. This form of jaundice belongs to the class of remote traumatic deuteropathies. It is, if one may judge from the scarcity of the documents relating to it, one of the most rare forms; its history cannot be completed except with the aid of new observations.

Art. 135.—*On the Treatment of Traumatic Erysipelas.*

By Dr. Wilde, of Plau.

(*Deutsches Archiv für klinische Medicin*, x. Band 1 u. 2 Heft. 1872; *Aerztliches Literaturblatt*, No. 6 u. 7, 1872.)

We have now arrived so far that, on the foundation of subtle observations and investigations made by modern surgeons, erysipelas is regarded as a capillar-lymphangitis of the cutis, and its origin is attributed to infection. Some hold that a special fungus, the micrococcus, and others that small animal organisms, the monads, are the agents of this infection, and both parties believe that the disease is at first a purely local one, but at a later period becomes generalized. According to the current ideas the most diverse methods of treatment are constantly tried and proved; these do not succeed and are then soon forgotten.

Although the confidence in the beneficial action of the various plans recommended in the treatment of the erysipelas may after many fruitless trials have been much shaken, Dr. Wilde nevertheless thinks that the notion of opposing this morbid process by disinfecting agents is a plausible one. When the two premises are true, the conclusion must needs be so too; that is to say, if traumatic tetanus be produced by monads or vegetable organisms, and we have an agent that will destroy these, then by the application of this agent can we arrest the erysipelatous affection, provided that the incorporation of the medicine, both locally and generally, has taken place at a sufficient depth. Dr. Wilde has sought for a destroying medicinal agent which could be applied directly and subcutaneously. Volkmann had previously conceived the idea that the surgeon in the local treatment of erysipelas must use the hypodermic syringe. He says: "It would be well if an agent could be found capable of destroying or neutralizing the infectious substance *in loco*. But even if such an agent could be found, and one should propose to apply it to the tissues by hypodermic injection, still it would be found difficult to obtain a sufficient diffusion of this agent over the whole of the inflamed region."

Among the substances which can be used *in loco* there is carbolic

acid; but this Dr. Wilde thinks is not a fit one, since even when much diluted it irritates the tissues and, when introduced under the skin, causes severe pains. On the other hand, the sulphocarbolate of soda possesses all the qualities which render a substance fitted for subcutaneous insertion. It can be readily dissolved in water, and when introduced under the skin in a solution of one part to twelve of water causes, as Dr. Wilde found by experiments on himself, extremely little pain. Whether the sulphur contained in this preparation influences to any extent this action Dr. Wilde will not venture to determine. The results of trials made with the sulphocarbolate surpassed the author's expectations and calculations, as "they were quite constant and striking." The beneficial action was usually manifested as early as the first day, and the evening temperature at once commenced to fall. On the second or, at the latest, on the third day, the margin of the erysipelatous patch completely disappears, the skin becomes pale, and defervescence is well established. On the third and, at the latest, on the fourth day, there is no other sign of the erysipelas than a slightly œdematous condition of the previously inflamed skin.

Art. 136.—*On Subcutaneous Injections of Morphia in Traumatic Erysipelas.*

By Professor Estlander, of Helsingfors.

(*Schmidt's Jahrbücher*, No. 4, 1872.)

Morphia injections were used originally in Professor Estlander's clinique in association with one of the so-called abortive means, usually the application of tincture of iodine, with the view only of removing the heat tension and pain in the inflamed portions of skin, as they could be applied more conveniently and were more rapid and certain in their action than the usual local means, which, indeed, exert no influence on the course of the inflammatory process. The speedy relief of the pain which followed the subcutaneous injections of morphia was enough to assure for them a place among the methods of treating traumatic erysipelas; it was, moreover, rendered manifest that these injections exert another influence on the affection, since those cases in which, in addition to the iodine treatment, morphia was also thus used, went through a decidedly milder course than the other cases. This observed fact led Professor Estlander to treat a number of cases by subcutaneous injections of morphia, to the exclusion of all other kinds of local applications. By the results of this investigation Professor Estlander was convinced that morphia acts directly on the inflammatory process, reducing its intensity and limiting its extension.

If in a case of traumatic erysipelas where the boundary between the inflamed and healthy portions of skin is not distinct, and the erysipelatous process is spreading in the form of large red and gradually coalescing patches, morphia be injected near the affected region, it will generally be observed on the following day that the inflammation has made very little, if any, progress. In cases where the erysipelas has made slight progress after an injection it will frequently be observed that the

skin around the seat of puncture has not been attacked. In more severe cases, where the boundary between the affected and healthy portions of skin is sharply defined, one may find, after injecting morphia near this boundary, that the inflammation, which had previously made considerable progress, is either at once arrested, or, as usually happens, takes a less rapid course, which on repetition of the injections is gradually arrested. In the worst cases of erysipelas ambulans, whether occurring sporadically or in epidemics, subcutaneous injections of morphia are as little fitted as all other abortive means to stop the course of the disease.

In order to solve the question how much of this result depended on the character of the erysipelas and how much could be attributed to the morphia, Professor Estlander made several investigations, but could not form any decided judgment concerning the various cases in which comparative trials of treatment spoke much in favour of morphia injections. He has, however, been convinced by an experience of five years that subcutaneous injections of morphia are much more efficacious than most other means which are usually applied in cases of traumatic erysipelas.

It is difficult to find an explanation of the manner in which morphia thus acts. It may be probably assumed that an arrest of reflex action takes place, and that in consequence of this the impulse through which the inflammation advances and increases is thus removed. A case in which eczema rubrum near one eye, after having been treated without success by several means, was at last rapidly cured after enucleation of the phthisical eyeball on the opposite side induced Professor Estlander to believe that the nerves in cases of this kind play a greater part than is usually attributed to them. Then there is the view that opium and morphia not only relieve the pain associated with inflammatory processes, but also limit the processes themselves; this view is old, and is based on the results of experience in cases of peritonitis, acute rheumatism, pneumonia, and several other diseases.

It may be conceived as possible, in rejecting any idea of interference on the part of the nervous system, that morphia acts locally in such a manner that the injected foreign fluid gives rise in the subcutaneous cellular tissue to an impairment of nutrition which hinders the further extension of the erysipelas, and to a process analogous to what Fenger sought to obtain in these cases by cauterization with nitrate of silver. This explanation is supported by the fact already mentioned, that the parts nearest to the point of injection remain unaffected by the still extending erysipelas. That morphia injections act more successfully than the external application of lunar caustic is due to the fact that the former pass more deeply than the latter into the subcutaneous cellular tissue, which is the chief seat of the morbid changes.

Professor Estlander uses for injection a solution of 0·12 gramme of hydrochlorate or acetate of morphia in 3·75 grammes of distilled water, and, as a rule, injects about a quarter or a half of the contents of a Luer's syringe, and thus either 0·0075 or 0·015 grammes of morphia. When it was observed that the erysipelatous blush did not appear at or near the seat of injection, the syringe was applied to several points of healthy skin, at distances from the erysipelatous inflammatory process

varying from one to two inches. Usually the injection is given only once a day, but sometimes, at the particular request of the patient, both in the morning and evening.

An especial advantage of these subcutaneous injections is this, that they can be associated with other means. Professor Estlander uses in preference tincture of iodine, with which he paints the affected part once daily; he then applies wadding and a bandage. In his earlier cases of erysipelas of the extremities he elevated the affected limb in order to diminish the flow of blood; but it was soon found that elevation, which is so useful in the treatment of phlegmonous processes in subcutaneous cellular tissue, was of very little service in cases of simple erysipelatous inflammation. Professor Estlander relies much upon the general treatment of erysipelas, especially upon the administration of an emetic, which he prescribes at the very commencement of an erysipelatous attack.

Art. 137.—*On Malignant Disease of Bones.*

By Thomas M. Markoe, M.D., Professor of Surgery in the College of Physicians and Surgeons; Surgeon to the New York Hospital, &c.

(*Treatise on Diseases of Bones*, 8vo, pp. 416. New York. 1872.)

Dr. Markoe's chapter on malignant disease of bones concludes with a statement of his opinions on the propriety of the operation of removal of these diseases, which applies to all malignant disease. He says:—

"Acting upon the principles we have now considered, I would refuse to operate:—

"1. In any case in which there was not a reasonable certainty that the whole of the diseased tissue could be removed.

"2. In any case where there was clear evidence that secondary cancer had taken place. This requires some modification. The mere fact of internal cancer having begun to show itself might not in all cases forbid operation. If the local disease presented unusually distressing or threatening appearances, we might sometimes be warranted in relieving the patient by operation of his immediate sufferings and dangers, though we might be sure that no prolongation of life could be gained by the operation. As a general rule, however, no operation should be performed where secondary disease has already developed itself.

"3. In any case in which cancerous cachexia was already well marked. It is to be presumed, in this case, that the general system is already poisoned by the disease, and that the powers of reparation are materially reduced. If the removal of the local cause could be relied on as a removal of the whole disorder, then we might hope, as in other cases in surgery, that the constitutional disturbance would abate on the removal of the source of irritation with which all parts suffer; but it is the effect, and at the same time a sign, of a change in the actions of the whole economy which is as much a part of the disease as the ulcerated tumour itself, and which will not be arrested in its progress by the most successful extirpation of the primary disease.

"4. In any case where the operation required was so formidable in its extent or character as to add materially to the dangers of the patient's condition, we would not hesitate to amputate a fore-arm where we might refuse to exarticulate at the hip-joint; and generally a trifling and safe operation would be more readily resorted to by the surgeon than one of great magnitude and danger. Our hopes of benefit do not warrant the running of greatly increased risk of life.

"5. Where the patient was very old and the cancer chronic in its course the slow progress of disease is likely to continue if it is left alone; the operation would be very likely to hasten a fatal termination in advanced age.

"6. Where the patient was not a subject for any operation by reason of bad habits, excessive fat, great feebleness, or any organic disease impairing nutrition or reparative power. I think, too, that unconquerable fear of an operation, or unreasonable dread of its consequences, should be a contra-indication not to be overlooked.

"On the other hand, I would advise an operation—

"1. In all cases where the disease could be easily and entirely removed, and particularly if, as in the case of amputating a cancerous bone, I could be sure of removing not only the disease, but the whole organ affected by it. This, I think, is a very important practical point, and I believe that the cases in which any other operation than amputation should be performed on one of the long bones affected with cancer must be very rare indeed.

"2. Where there was no suspicion of any secondary disease in any internal organ, and no extensive affection of the lymphatic glands. The mere enlargement of a few of these glands by local infection is no contra-indication of an operation, statistics not showing that this condition adds materially to the unfavourable prognosis, particularly if they admit of complete removal.

"3. Where the true cancerous cachexia was not yet developed in any marked degree. It is not always possible to discriminate between the constitutional effects of cancer as such and those depending on the ordinary causes of failing health and strength, such as pain, hæmorrhage, excessive discharge, and the like. In many cases, however, it can be arrived at; and where there seems to be no failing of the powers of life but what can be accounted for by the effects of the local actions we have a right to recommend an operation, in the hope that for this form of constitutional impairment the removal of the local cause will prove a remedy.

"4. If the operation required for the removal of the disease be not one seriously imperilling life. In cancer of the bones this question is brought down to the comparison of a very few operations; mainly amputations and the excision of the upper and lower jaws. All these are serious operations, and should not be lightly determined upon; but for most of them the precise grade of danger is almost mathematically proved by reliable statistics; and, inasmuch as in these operations we are cutting through perfectly sound parts, we may almost say that we can announce the precise amount of risk we are recommending our patient to assume in undergoing any given amputation. Of course this risk will be modified by the condition of the patient in other respects than

the cancer for which the operation is to be performed; but this condition presents nothing which we are not accustomed to deal with in the ordinary problems of surgery, and is to be appreciated in accordance with its well-known laws.

"5. If the cancer be of slow growth and the patient not old, we have very good reason for believing that the recurrence will be long delayed, and the period of exemption from disease will be a long, perhaps a very long one. It is from this class of cases that most of the so-called cures are derived, and though I cannot assert that statistics prove the fact, yet I think their results render it highly probable that the slower a cancerous growth is in passing through its earlier stages the longer is it delayed after operation, and the slower its progress when it does return. Very acute cancers are generally unfavourable cases for operation.

"6. The good general health of the patient is a strong point in favour of an operation deemed proper for other reasons, as well as an earnest of its success. I cannot help feeling, too, that in all cases a strong desire for operation and a strong conviction that it will be successful on the part of the patient may be accepted by the surgeon, not only as a good omen, but, as far as it goes, a positive indication.

"Lastly, though it may not flatter our scientific vanity, yet it is but honest to confess that the uncertainty of our diagnosis may give some encouragement to operation; as in removing what we believe to be a cancer we may, perhaps, be extirpating a perfectly benign growth, and, instead of giving our patient a brief respite from death, our mistake may secure for him an uncontaminated and healthy life."

Art. 138.—*On the Normal and Pathological Growth of Bone.*

By Dr. Ollier.

(*Gazette Hebdomadaire*, No. 37, 1872.)

The following was communicated to the French Association for the Advancement of Science at a meeting held in September, 1872:—

"The question of the increase in the length of bones seemed to have been completely solved, and the theory of their peripheral increase perfectly demonstrated by experimentation. Recently, however, the labours of German savants in applying for the support of the old theory not only reasoning but experiment, have unsettled our former views as to these matters. I have considered it advantageous to take up again the studies which have induced me to defend the theory opposed by Wolff, Culmann, and Meyer. I have repeated the experiments which led me to reject the theory of the interstitial growth, and, in order to avoid causes of error, I operated upon very young animals (dogs, cats, fowls, pigeons). In the first series of experiments made on dogs and cats I acted in the following manner: Two pegs were inserted at a certain very rigorously measured distance from each other on the diaphysis of a long bone; some time afterwards, when the animal had attained adult age, it was killed and the distance between the pegs again measured. Whatever the lapse

of time between the operation and the necropsy I made out from more than thirty experiments that the pegs were not much further from each other, and that the interval between them remained the same. This series of experiments in itself suffices to overthrow the German theory of the interstitial growth of bone. In some very young animals I have observed an increase in the distance between the two pegs, but this increase never exceeded the one-fortieth of the total length of the bone. It is necessary, then, to return to the theory of peripheral growth.

"Duhamel has expressed this theory in a very true if not very rigorous phrase: 'the hard bone does not spread,' he says, 'but it is the young and soft bone that spreads.'

"Soft tissues, indeed, increase in length by interstitial growth, but experiments show that bones comport themselves like other tissues so long as they possess analogous properties.

"The supporters of the theory of Havers hold that the conjunctive cartilage has nothing to do with the growth of the bone. If this cartilage be removed what is the result? Immediate and absolute arrest of the growth of the bone. The importance of this cartilage is proved by the fact that one may remove from the diaphysis of the bone a portion several millimetres in length, and yet the bone will not cease to grow.

"I oppose the theory of the interstitial growth of bone, although I do not absolutely deny the fact. I as well as others have observed elongation of the bones of certain birds upon whom experiments had been made, and also, as has been stated above, in mammals. In the latter instances, however, there had been ostitis; the bones had become soft, and had acquired the property of soft tissues, formulated by Duhamel. In these cases I did not obtain an elongation by more than four or five millimetres in bones measuring twelve or fifteen centimetres. This elongation, then, may be justly regarded as quite exceptional, and even abnormal, in the general question of the growth of bones.

"This last fact leads me to speak to you concerning the pathological growth of bones. In the year 1867 I deduced from experiments and clinical observations the following propositions: If the diaphysis of a long bone be irritated by introducing a foreign body into the medullary substance, by scraping the bone, or by tearing away a portion of periosteum, the bone will become elongated; if the conjunctive cartilage be irritated there will be arrest of development. It is not necessary to imagine that the latter result is obtained in consequence of the more rapid ossification of the diaphysis; whether the soldering according to the mode of irritation be accelerated or retarded, the disturbance in the process of ossification remains the same, the bone ceases to grow.

"These experimental facts explain the pathological facts, which in their turn corroborate the former. In certain cases hypertrophy of the inflamed bone is observed. I have seen a tibia twelve centimetres longer than its fellow. In other instances there is, on the contrary, arrest of development. The explanation of this is as follows: In the inflammation, if the ostitis—and this term must be taken in its most general sense—if the ostitis, I say, has been central, that is to say if it has had its seat in the diaphysis, however closely it might have approached to the epiphyseal cartilage, it will result in hypertrophy. Irritation of the

parts near to the cartilage is even favourable to this hypertrophy. But if the inflammation has involved the conjunctive cartilage then there is arrest of development, just as in cases where the cartilage has been removed with a cutting instrument.

"This question of the pathological growth of bone is very interesting with regard to the consequences of mutilation of the skeleton. But study of the normal growth reveals to us facts that are not less important from a clinical point of view. The two conjunctive cartilages cannot take an equal part in the growth of long bones. Place a peg in the middle of a long bone, the humerus, for instance, of a young animal; kill this animal when it has attained adult age, and you will find the peg near the lower extremity of the humerus.

"M. Broca had found out this fact whilst engaged in the study of rickets. Experience has since definitely established it, and has, moreover, demonstrated that the law does not apply equally to all bones. I have made out that the growth of the humerus takes place especially at the upper extremity; that of the ulna and radius, on the other hand, at the lower extremity. In the bones of the lower extremity the mode of growth is the opposite of that of similar bones of the upper extremity. Bérard remarked that the apophyses of the elbow were the first to unite in the upper limb; but one has not to deal solely with the process of union. There is a process of general elongation of the bones of the upper limb in which the epiphyses concur, but to a slight degree, as may be observed in the early periods of life.

"From these facts it results that the constituent portions of the elbow do not take, so to speak, any part in the growth of the upper limb, whilst those of the knee are the principal elements in the development of the lower limb.

"This difference in the parts taken by the articulations of the elbow and knee explains the difference in the results obtained after their resection. In 1861 I mentioned, in a communication to the Academy of Medicine, that after resections of the elbow performed on infants the upper limb continues to grow, and that the difference in length between the two limbs closely corresponds to the amount of bone removed during the operation. After resection of the knee, on the other hand, the limb hardly grows any more, and there is a great difference when the sound limb continues to grow.

"The results of excision of the shoulder, when the portion of bone removed bears the superior cartilage of the humerus, may be likened to those attending excision of the knee. I should add, however, that after resection, and even after inflammatory lesions, one may observe an increase in length of the limb operated upon—a kind of compensatory hypertrophy which may add one-tenth or one-twelfth to the length of the limb which is its seat. I have observed this fact, which has not been previously described, in animals, and even in man; for example, I have seen it in the humerus after excision of the wrist.

"This increase in length may be observed after all mutilations, amputations, resections, or inflammatory lesions. It need not be supposed that it is accompanied by veritable hypertrophy. I have given to it the name of *atrophic elongation*. I explain the fact in the following way: Whenever the pressure of the bones on each other is diminished modifications occur

in the nutrition of these bones, which become straighter and longer. When a limb has been paralysed this modification is brought about. I have observed elongation of the tibia and fibula in the cat after division of the sciatic nerve. But the elongation thus produced is not maintained; at the end of seven or eight days atrophy occurs from functional inertia. I have not yet been able to verify this occurrence of *paralytic elongation* in man."

Art. 139.—*Modern Treatment of the Advanced Stages of Constitutional Syphilis.*

By William Acton, M.R.C.S.

(*British Medical Journal*, August 17.)

Mr. Acton read the following paper before the Surgical Section of the British Medical Association, mainly with the view of eliciting from M. Ricord, who was present, a statement of his present opinions on the important question of the treatment of syphilis.

Mr. Acton remarked: "On what constitutes the virus of syphilis I fear we know little more at present than we did thirty years ago. Experience, however, has corroborated M. Ricord's observations, that relapses of constitutional syphilis are not uncommon even after long periods of apparently perfect convalescence. These accessions of disease we may attribute sometimes to neglect of treatment; but we must admit, likewise, peculiarities of constitution and temperament as bearing on the tendency, which, in spite of the best regulated treatment, will be followed by relapses. In other instances it is noticed that any general disease which will debilitate the system may be followed by an attack of constitutional syphilis, which without such debilitating cause would never have occurred. The old theories about the influence of ferments seems to be borne out by some of these exceptional cases.

"Practitioners, however, will agree with me that in the present day, in some of these rebellious cases, patients and medical men both lose confidence in remedies, and there are those among us who, after seeing such relapses, doubt if it be the effects of syphilis or mercury which we have to treat in these advanced cases.

"The treatment should consist in ameliorating the symptoms, commencing with those that are most urgent. We should attempt to improve the broken-down constitution too often found in these instances; if mercury have been given, we must leave it off till the constitution has somewhat recovered. Our object should be to place the patient in the best possible condition as regards air, diet, and freedom from anxiety, and, if possible, to give him confidence that the disease is curable, for the moral and mental depression to which the patients are reduced is often very painful to witness.

"This being done, I commence with tonics and iodide of iron. If there be ulcers, I treat them with the ointment of nitric oxide of mercury. If the throat and voice be affected, topical applications must be used. If osseous or periosteal tumours exist, iodine or blisters should be applied to reduce the size of the swellings and prevent disfigurement or pressure on the brain or spinal cord. This local and general treat-

ment will act almost as by a charm in relieving sleeplessness and pain in the bones and joints.

"In the commencement, notwithstanding that iodine may have been taken (according to the statement of the patient) without previous benefit, I commence the syrup of iodide of iron in bitter infusion, taken at mealtime in moderate doses. As long as the remedy tells on the constitution I adhere to moderate doses; but as soon as convalescence tarries or progress is not made I increase the dose even to two drachms three times a day. When the system becomes tolerant of these doses, I change the syrup for the iodide of potassium in solution, beginning with ten or fifteen grain doses, taken at meals and ditsolved in large quantities of fluid.

"The subsequent treatment should be guided not by the number of grains given, but by the effect which the remedy has on the complaint. As soon as the disease ceases to retrograde I augment the dose with the best possible effect. When the preparations of iodine and potash cease to benefit the patient I add bromide of potassium, not in combination with the iodide, but prescribe it at a different time of the day. It frequently happens that we succeed in curing the disease with these salts, but if the complaint be very persistent, if relapses occur after short intervals, I no longer hesitate to give mercury, and my hearers may be glad to learn what are the indications we follow in the administration of the remedy.

"*Treatment with Mercury.*—As a general rule it must be admitted that mercury is not required in the treatment of the advanced stages of constitutional syphilis. In fact, we attempt to cure our patients without resorting to the mineral. On the other hand, there are many instances in which the recovery hangs fire; the patient ceases to improve even under large doses of iodine. The disease becomes stationary. Yet such are the objections of some practitioners to a course of mercury, that, in spite of the recrudescence of severe symptoms, the anti-mercurialist will not give mercury in any form. This is an error of the day. The rule which experience teaches us is that if a relapse occur, or if the progress of recovery be arrested, after the various preparations of iodine have failed, some of the mercurial preparations must be had recourse to, judiciously given and closely watched. In some cases friction with mercurial ointment will be most beneficial; and I must admit that in England I find the old plan of rubbing in mercury answer better than almost any other that I am acquainted with. There are those who employ fumigations. M. Ricord is very partial to a prescription combining biniodide of mercury, iodide of potassium, and sarsaparilla. In these stages the writers of the last century had a high opinion of corrosive sublimate; but this irritant poison has fallen into disuse in modern practice. Those of my hearers who are acquainted with the writings of the older authors on syphilis need not be reminded of the almost miraculous discoveries detailed after giving mercury, long before iodine was known; and it is stated that the patient never had a relapse. These old writers, however, omitted to state how often the remedy not only failed, but brought the patient to an early and untimely grave. I can bring to my recollection many instances which, I have every reason to believe, died from the administration of mercury given

on the old plan, and which would now be rescued by the mercury being preceded by the different preparations of iodine.

"If mercury be found beneficial, as I am sure it will be if judiciously given and carefully watched, and the symptoms of syphilis subside, the preparation should be persisted in till every vestige of the disease disappears. The dose required is sometimes surprisingly small. I have known obstinate symptoms, which have withstood iodine, disappear in six weeks. In a case now under my care, of syphilitic nodules of the testis, a six weeks' course of frictions has been required to enable the testis to recover its former elastic feel, and its functions are now performed satisfactorily. It is singular to notice in these cases how the general health improves under mercury. The patient loses the habitual earthy expression, becomes florid, and gains flesh; his spirits improve as the local affection declines and he ceases to be liable to relapses."

The reading of the above paper drew from M. Ricord the following speech:—

"There is one question which comes before the medical man very frequently: Can syphilis be cured radically? That is the question which we will consider. There is an immense quantity of venereal disease cured—clap, swelling of the glands, soft chancres, warts—all these 'accidents,' not belonging to syphilis, and not associated with secondary symptoms, being radically cured. Since these have been distinguished from real syphilis there have been great differences in the treatment of them, and they have been radically cured. Doubts have been raised whether real syphilis can be radically cured; and those doubts are not new. Mercurialis thought that it was liable, even after the lapse of years, to break out again; and the doubts remain in the minds of many whether it can be cured radically, or whether it can be cured only temporarily. Well, that doubt may remain until I establish before you that the law regarding syphilis is the same as the law regarding the small-pox, measles, and such like. You can have at the one time only one small-pox, only one cow-pox; and as, just so long as the cow-pox influences the system, you cannot have another small-pox or another cow-pox, so in syphilis; for, as long as the patient is suffering under the syphilitic diathesis arising from an indurated chancre, he cannot have another indurated chancre. The application of this law is that, while a man is suffering under the effects of secondary symptoms he cannot have a chancre of an indurated character; so that if you want to know whether the system of a man is altogether free from syphilis, you can do so by inoculating him with an indurated chancre; if it take, he was free; if not, he was insusceptible. That is a great point to be reached in the science of medicine. I say, and say distinctly, that syphilis can be radically cured.

"Now as to the case of syphilis in the first stage—the primary sore. You have first to find if this be really the hardened chancre, and it comes with the swelling of the glands; but with it the glands never suppurate. I at once institute the mercurial treatment. Now, there is one point here upon which there is a difference of opinion, for some think that you cannot prevent the secondary symptoms; but I say that if the treatment be well done and soon done—and this is most important—you can prevent the first bursting out of the secondary

symptoms. Why it is not prevented is that the treatment is applied too late in the first instance, and the secondaries often come before the treatment of the primary is commenced. But if you make the treatment of the primary early and effective the secondary will not appear; I can give you warrant for that. The best treatment for the secondary symptoms is the mercurial, and it must be continued and continuous. In Germany, and in other places as well, the treatment of the secondary symptoms is not continued long enough. You should choose a treatment which does no harm to the constitution and continue it for five or six months, and you will have very few cases of relapse; and, after the mercurial treatment is finished, go on for another six months with iodine. When a person comes to me I tell him that he will have to continue under treatment for twelve months. If he will he will; but if not, then I say at once 'good-bye.' But then, you know, there are complications. The treatment I have given you is for syphilis arising in a person who is otherwise healthy, and there is then but one enemy to fight against. But in other cases you may have, in addition, scrofula, or an otherwise bad constitution. Well, then the case is not the same; for many of these constitutional disturbances are interfered with by the syphilitic treatment. In many of these cases the syphilis is the second thing to look at, and you must begin with the constitutional disease first; you must attack the strongest enemy first, and he sometimes waits until you come to him before he opens his attack. Then you must come on gradually with your syphilitic treatment; and that which I prefer in complicated cases is iodide of mercury, which causes little diarrhœa. One capital treatment is that of rubbing in—it is easy and effective. But there are cases in which the rubbing cannot be employed. In the next stage I employ iodide of potassium. I use large doses of this, up to 60, 70, 80, and 100 grains a day, and even more. I have made experiments with this; and I have found that, half an hour after the dose has been given, it has passed through the urethra; and it is in reality a sort of broom to the blood. The supply must be kept up. In secondaries a treatment partly of this iodide and of mercury has its advantages. I have had the potassium stop doing good, and I have gone back to the mercury with good results. This is what Mr. Acton has said, and I quite agree with him. When syphilis has lasted a long time and has had great effect upon the constitution it somehow disappears, and leaves the patient suffering from a complication of diseases which may have been existing before. Well, then, you must stop all syphilitic treatment, and repair the deterioration of the blood by iron and bark. Mr. Acton spoke about the use of bromide of potassium; and I agree with him in its use, for it is a splendid remedy for a complication of syphilis in some cases—in syphilitic diseases of the brain and nervous system; but you cannot depend upon it as an antisyphilitic remedy.

"Now I would impress you that you can tell your patients that this terrible disease can be radically cured if they have the courage sufficient to go through the treatment and their physician have the courage to go through it with them."

Art. 140.—*Report on the Treatment of Ulcers in the Hospitals of Great Britain.*

(*British Medical Journal*, June 15, 22, and July 13.)

It is proverbial that the treatment of most ulcers of the leg in the out-patient room is unsatisfactory and disheartening. It is not unlikely that the frequency, obstinacy, and uninteresting character of ulcers of the leg, together with the belief handed down as to their incurability, may sometimes lead to carelessness, if not neglect, on the part of the surgeon, in the treatment of these cases. With the view of ascertaining whether this belief is really well founded and entertained amongst metropolitan surgeons, and of obtaining a few details of the means used in the treatment of ulcers, we have collected a few notes on the subject which will be read with interest. We especially sought for experience of surgeons in the employment of skin-grafting; and the remarks on this method of treatment are particularly instructive, and promise excellent and speedy results in many instances.

ST. BARTHOLOMEW'S HOSPITAL.

Mr. Savory has had several cases of skin-grafting on ulcers of the legs and other parts, and has been led to form a very favourable opinion of the plan. In almost every instance the majority at least of the fragments transplanted, and in some instances all of them, amounting perhaps to six or eight, have lived and grown. In the earlier cases Mr. Savory scratched the surface of the ulcer before inserting the morsel of skin; but in the later ones he has simply placed the tiny bit, snipped off as superficially as possible, usually from an amputated limb, upon the unbroken surface of a healthy ulcer. He usually fixes the fragments with strapping, and takes care not to disturb them, if practicable, for two or three days or more. In one instance, that of a boy ten years of age, the whole of the integument of the leg, from the knee to the ankle, had been destroyed by a burn. The entire surface was covered by healthy granulation, but this extensive ulceration showed little or no disposition to contract. Skin was grafted twice; in the first instance six fragments, and in the second four, were placed on the surface. Every morsel lived and grew, and by this means the whole surface at length closed in and the limb was saved.

THE MIDDLESEX HOSPITAL.

Mr. George Lawson says that the treatment of ulcers of the leg should be both constitutional and local. The constitutional treatment will prove a powerful aid in the cure of ulcers, for although the disease is apparently local, yet it is very dependent on the health of the patient. A large number of the ulcers which are met with in the daily hospital practice are due solely to the causes already mentioned—viz., uncleanliness, self-neglect, want of rest, and a constitution impaired from irregular and drunken habits. In all these cases, if the patient be made to maintain the leg in the horizontal position and the ulcer be kept clean and covered with strips of lint wetted with water or with some slightly

stimulating lotion, and a good diet with a moderate allowance of stimulants be prescribed, the wound will rapidly heal. The patient's health under the improved diet and rest will speedily begin to mend, and a corresponding improvement will at the same time appear in the ulcer. When, however, the ulcers are traceable to some specific taint, such as syphilis, a mere local application is useless without the aid of some of the antisyphilitic remedies. Iodide of potassium, or small doses of the liquor of bichloride of mercury, with decoction of bark, may then be given, or the two may be often combined with advantage. Mercury, given in the form of blue pill or calomel, so as to affect the gums, is positively injurious. For the effectual treatment of all ulcers of the leg absolute rest of the limb is the first element. Bandaging and strapping the leg may do some good by supporting the parts, and thus affording a certain amount of rest by restraining the freedom of motion; but it is comparatively ineffectual when contrasted with the good which accrues from keeping the patient in bed with the limb constantly in the horizontal position. The medicines which appear to be the most useful in the large and painful ulcers of the leg which are met with in hospital practice are the mineral acids with bark and opium. The effect of opium on ulcerations when rightly administered is very striking. It allays pain, procures sleep, and often, in an incredibly short space of time, completely changes the characters of the wound. It is the phagedænic and the senile ulcers which appear to be most under its control; in the former it arrests its progress and restores healthy action, whilst in the latter it relieves pain and induces healthy granulations. Other forms of ulceration are also much benefited by opium, although in the two mentioned its effects are most striking.

In the large chronic ulcers, with a thickened brawny condition of the leg, skin-grafting is a most valuable adjunct. Before, however, transplanting portions of the skin the patient should be taken into the hospital and kept in bed, and similar remedies applied until the wound assumes a healthy granulating surface. Small portions of the integument, taken from the arm or elsewhere, may soon be implanted on the ulcer, and with an almost certainty of success. As soon as two or three pieces of the new skin have established their vitality others may be added, until at last the whole chasm is completely bridged over with new skin. The advantages which this mode of treatment possesses are that the tendency for a wound thus closed to break open is diminished; and, if the ulcer should again appear, the grafts usually remain entire, or a very few of them perish, and the wound will again close up more rapidly than if no skin-grafting had been employed.

Mr. Andrew Clark says that, in considering the treatment of chronic ulcers of the legs, we must remember that the majority of out-patients being half-starved, hard-working people, the two essentials of treatment, rest and good food, must be put out of the question, patients always saying that they rest as much as ever they can. The cause of the ulcer is frequently a kick and the veins are often not enlarged. The ulcers are often of long standing when first seen in the out-patient room, and present a greenish unhealthy aspect and smell very badly. Under carbolic acid lotion, one part of the acid to sixty of water, with ammonia and bark internally, they generally assume a healthy appear-

ance. When they appear to heal, a lotion of nitrate of silver, two grains to the ounce, applied on a piece of lint of the size of the sore, much assists the healing. As a rule, however, when the ulcer arrives at this stage the patient leaves off attending, as he appears to suffer but little pain, and in a month or six weeks he returns with the ulcer as bad as ever.

Stimulating ointments, as resinous ointment, always seem to produce pain; and other ointments, as zinc, appear to interfere with keeping the sore clean. If there be much inflammation of the skin around, lead lotion may be substituted for the carbolic as soon as the smell is removed.

KING'S COLLEGE HOSPITAL.

Mr. John Wood has tried skin-grafting in large chronic ulcers of the leg extensively, and with the best results as regards rapidity of healing. The way in which he has carried it out is to take a surface of skin from a thick part on the outside of the leg, about the size of a threepenny-piece.

A lancet is the best instrument to do this with, care being taken to prevent the skin as much as possible from curling up, and to lay the deep surface flat upon the granulations. He makes an incision into the granulations, but keeps them as dry as possible, taking care that the part upon which the graft is applied is as florid and healthy as possible. The first grafts he places across the middle of the sore, so as to promote the formation of an isthmus of new skin which shall divide the sore into two parts. He then subdivides in like manner each of these halves, and thus the advantage of a cicatrization quite round the circumference of continually diminishing circles is obtained. The practice of incising the granulation to graft in the skin Mr. Wood believes to be a mistaken one, inasmuch as the bleeding which ensues prevents instant coaptation and adhesion. The same remark applies to the presence of profuse suppuration in the sore, which is, besides, an evidence of debility in the granulations. By the above means, Mr. Wood supposes, the time for healing a chronic ulcer is shortened by one-half. He has thought, however, in one or two cases, that the resultant cicatrice was somewhat less durable and ulcerated again more quickly than usual, but on this he has not yet formed a settled opinion.

ST. THOMAS'S HOSPITAL.

Mr. Francis Mason believes that in out-patient hospital practice the "simple," "healthy," or "purulent" ulcer in its typical form is seldom met with, and thinks that the reason is obvious when its chief characteristics are taken into consideration. Thus, it is not painfully sensitive, it advances towards a cure often rapidly, and generally its progress is steady and perceptible; hence, as soon as the healing process has fairly set in, and the patient suffers little or no discomfort, he discontinues his attendance.

By far the commonest varieties of ulcers of the leg are—1. Those often associated with eczema of the part, hence designated "eczematous ulcers." They become sometimes inordinately painful, the skin being especially implicated, and might be not inaptly termed according to their physical characters, "inflamed ulcers." 2. Those that, having

progressed up to a certain point, remain stationary, and are "œdematous" or "weak." They are flabby in appearance, and not especially tender. 3. The "serpiginous ulcers" frequently found on the dorsum of the foot and in the neighbourhood of the knee-joint. They commence as small elevated portions of thickened skin of a dusky red hue, which break down, leaving an ulcerated surface the edges of which are more or less irregular and are frequently undermined. In some instances the ulcerated skin presents a honeycomb appearance, a patch as large as the palm of an adult hand being fissured or starred in all directions. On separating these fissures the ulcerated surface is brought into view. The ordinary "callous," "indolent," or "atonic" ulcers, with their peculiar hard raised edges are, in Mr. Mason's experience, comparatively rarely seen; the explanation being, as he thinks, that, as they are relatively painless, the sufferers pay little attention to their condition, and not unfrequently console themselves in the reflection that an open wound acts as a safety-valve and obviates a greater evil.

With regard to the treatment of any ulcer which is painful or inflamed the first point of importance is to clear the intestinal canal with a saline purgative containing a little colchicum. After the bowels have been thoroughly relieved, opium, morphia, or henbane, in repeated but small doses, may be given to allay the pain. Soothing applications, opiate lotions, a light poultice, or even the ordinary water-dressing, may be used to the part, but bandages have, as a rule, a tendency to aggravate the inflammation in very painful ulcers. A simple diet without the use of malt liquors is advisable.

In this "œdematous or weak ulcer" a bandage often does great good, and the wound may be touched advantageously with nitrate of silver, always commencing at the centre and finishing at the circumference, thus putting the caustic on the most painful part last. Should a patient have a particular objection to the application of the caustic, a piece of dry lint placed on the part will probably have a sufficiently stimulating effect. Astringent lotion of sulphate of zinc, or the zinc ointment, may afterwards be employed; and a liberal but nutritious diet, with a spare supply of malt liquor, recommended.

In the "serpiginous ulcer" the nitrate of silver may be freely applied, especially under the overhanging edges. Small pieces of lint of suitable size, either alone or dipped in the lotio hydrargyri nigra (*Ph. B.*), with subsequently astringent lotions, may be packed carefully into the wounds. In such cases much benefit is derived from the administration of iodide of potassium in five to ten grain doses three times a day, and giving five grains of blue pill every other night. In these ulcers a non-stimulating but nutritious diet is highly necessary, and cod-liver oil may be taken with or without preparations of iron.

Whilst strapping is of comparatively little value in the foregoing varieties, it is almost indispensable in the "callous" or "atonic" ulcer. Mr. Mason has from time to time tried in this form of ulcer carbonate of iron in powder, chlorate of potash, and other supposed specifics, without benefit; but he has much confidence in the compound tincture of benzoin (the old-fashioned friar's balsam), which has a marked effect in promoting a healthy action on the surface.

With respect to skin-grafting in cases of ulcers, Mr. Mason's expe-

rience may be thus summed up. He has frequently tried it in cases of ulcers of the leg in out-patients, and it has invariably failed. In order to be effectual the bed of granulations must be nearly, if not quite, in the condition of a typical healing ulcer, although it must be admitted that, if the graft be placed on exuberant, flabby, œdematous granulations, it will in most cases adhere. The portion transplanted has, in Mr. Mason's practice, generally been about as large as a millet-seed; but it has varied from a mere scale, obtained by scraping the cutiele, to a piece of skin of the size of a shilling; indeed, in one case a piece nearly as large as a florin was successfully grafted.

Whilst the operation of skin-grafting doubtless tends to increase the rapidity of the healing process, yet it offers no certain immunity from the recurrence of the ulceration when the patient resumes his avocations. Mr. Mason has seen several cases in which the ulcer has repeatedly broken open, leaving the engrafted portions of skin as permanent little islands, which have again and again assisted materially in repairing the wound. The inference to be drawn from such cases is that the more extensive the skin-grafting, the greater is the chance of a complete and lasting cure.

GUY'S HOSPITAL.

Mr. Thomas Bryant has very extensively carried out the treatment of ulcers by skin-grafting, and believes that many cases are now rendered curable that were not so previously, that the cure of others is facilitated, and that interest is given to a class of cases which previously offered little clinical instruction. By the process of grafting large surfaces speedily cicatrize, which, under former circumstances, would have required many months, and that, too, without the contractions and subsequent deformities which, under other conditions, were too well known to follow in such cases. The practice seems applicable wherever a large granulating surface exists, and the only essential point to observe is that the surface of the sore should be healthy; this clinical fact including another, that the patient's health is good, for there is no better barometer of health than a sore, its surface assuming a healthy or an unhealthy appearance with every alteration in the general condition of the body. Mr. Bryant has attempted, by way of experiment, to graft skin upon sores which were not quite healthy, and has sometimes succeeded. In an indolent sore, in which a small patch of healthy granulations sprang up, he has succeeded in securing, by transplanting, a new centre of "cutification," that proved of great value in aiding the healing process, but in a large number he has failed in securing such an end. It may, therefore, he thinks, be accepted as a truth that a healthy granulating surface is an important requisite for success. Mr. Bryant uses a pair of scissors after those recommended by Dr. Macleod. They take away a portion of skin that will cut into three or four pieces, and the section includes only the upper layer of the true skin with rete mucosum. He generally takes the skin from the fore part of the arm or the inside of the thorax. The pieces of skin should be placed upon the granulations about half an inch or three quarters of an inch from the margin of the sore, and about one inch apart, and gently pressed in.

There is no necessity to wound the granulating surface. They should be covered with a piece of oiled gutta-percha skin, and the whole supported with cotton-wool; a bandage being subsequently applied, so as to press moderately upon the part and keep the dressing in position. On the third day, but not before, the dressings may be removed, the greatest care being needed; a fresh piece of oiled gutta-percha skin being subsequently applied. The appearances of the engrafted pieces on the removal of the first dressing vary considerably; at times they will seem probably to have taken root and to be alive; at others to have disappeared altogether; whilst in a third class the surface of the cuticle will be seen floating, as a thin film, upon the secretion of the sore, the basement membrane of the cuticle—the essential part—being left. Under all these circumstances, however, the surface of the sore is to be cleansed with the greatest care, a stream of tepid water, either squeezed from a sponge or injected from a syringe over the part, being the best means to employ. The surface is on no account to be wiped, for the grafted portions of skin are easily uprooted, whilst those that appear to have died or that have disappeared often reappear at a later period as "cutifying centres." As soon as the new centres are established in large sores other pieces should be engrafted, at about the same distance from the new pieces as those originally inserted from the margin of the sore; and in this way the whole granulating surface may be speedily covered with new skin and a rapid recovery take place. There seems no objection to mincing the portion of integument which is to be employed into minute fragments—that is, into pieces of the size of millet-seeds; the thumb-nail of the surgeon being the best table for the purpose. Recently the practice of applying "skin-dust," or the products obtained by scraping the skin, has found favour and met with some success. In the few cases in which Mr. Bryant has tried it the ulcers healed, but he has no evidence to show that any new cutifying centres were established by the proceeding. In the hands of Mr. Poland it has, however, been of value. Mr. Bryant doubts whether it is yet proved that the newly engrafted skin possesses the same power of resisting disintegrating changes as the old skin. Some observations which he has made have led him to suspect that it is somewhat prone to break down and ulcerate on the patient walking after the sore has completely healed, particularly when the subject is past middle age.

WESTMINSTER HOSPITAL.

Mr. Barnard Holt's treatment for ulcers of the leg consists in an endeavour, by proper position, attention to the general health, and suitable dressings, to procure a moderately healthy granulating surface, taking care to remove with the knife all hypertrophied cuticle in the margin of the ulcer. Having done this, provided the ulcer is not very extensive, he invariably hermetically seals the wound by the application of oiled silk, collodion, and strapping in the following manner. A square piece of soap strapping two inches larger than the outer circumference of the ulcer, having a hole made of the exact shape of the ulcer, is applied upon the leg. Upon the strapping good collodion is applied with a brush, and over ulcer and strapping one square piece of oiled silk is laid.

This at once seals the ulcer; and in order to prevent the edges of the oiled skin from rubbing up, he further fastens them down with small strips of plaster. If the discharge be profuse the sealing will require to be repeated in a couple of days, but the intervals of removal are quickly prolonged, inasmuch as the exclusion of air limits the discharge and facilitates the formation of skin from the edge of the ulcer. No other application is required and the ulcer speedily heals. Mr. Holt never destroys exuberant granulations by sulphate of copper or other caustics, as the encroaching skin speedily produces their absorption, and the application of caustic destroys the fine filamentous cuticle that is to close the ulcer. He has employed this method of treatment for years with the most satisfactory results. Of course these observations only apply to ulcers that are not the result of any specific poison.

Mr. Cowell rarely uses ointments in the treatment of ulcers of the leg. The inflamed or discharging ulcers he treats with weak carbolic acid lotion (1 in 40), accompanied, in most cases, with the administration of some saline aperient every morning. When there is less action, he recommends a lotion containing the sulpho-carbolate of zinc or copper—two of the salts introduced by Dr. Samson. This he uses of two strengths—two and a half and five grains to an ounce of water. These salts form a good stimulant, and seem to keep the surface of the wound clean. Indolent sores are treated in the same way, with the addition of painting the surface twice or thrice a week with a solution of nitrate of silver (20 or 40 grains to an ounce). The solution is also painted over the whole of the surrounding skin when it is red and congested, as it speedily gives tone to the capillaries and small vessels of the part, and relieves the engorgement and stasis which prevent repair. Ulcers on the calf alone Mr. Cowell considers to be always syphilitic. This form of ulcer, on whatever part of the leg it is situated, is of course treated with the black or yellow wash, and iodide of potassium is prescribed. Bandages are used in all the forms of ulcer of the leg whenever they can be borne, otherwise rest in bed is imperatively enjoined. Old chronic ulcers with callous margins are best treated, he considers, by strapping the foot and leg to above the ulcer, the latter being covered with the strapping without the interposition of any other dressing.

Mr. Cowell has employed skin-grafting in five cases of large ulcers of the leg. Two were successful after the first operation; a third succeeded after a second transplantation; the other two failed altogether. He prefers numerous very small pieces, as recommended by M. Reverdin, but thinks the size immaterial. The one essential for the success of the operation is a healing condition of the sore, the granulations being clean and healthy and not exuberant. This condition was imperfect in the failures above mentioned.

There are two cases now in the Westminster Hospital in which Mr. Cowell hopes soon to be able to perform the operation of skin-grafting; one is a case of burn, the other a large granulating surface on the abdomen, following a slough produced by exposure.

Mr. Richard Davy constantly declines attending out-patients with ulcerated legs, feeling convinced that nothing short of a revolutionary change in the habits of the London poor can justify an expectation of

permanent relief. Out-patients thus refused attendance are recommended to enter the workhouse infirmary. Admitting that four or five drugs are efficacious for internal exhibition in the treatment of ulcers, and that lotions and ointments gratify the standard whim of an out-patient, sterling value must essentially be granted to extreme cleanliness and elevation of the limb, rest, and health-giving essentials.

As to skin-grafting and epidermic dust, both have succeeded in healthy sores; but the cicatrix so resulting, though more rapidly produced, is far more ready to reopen than that formed under a slower process. The callous-edged sore yields readily to the blistering plan of treatment (as taught by the late Mr. Syme). The most common dressing used by Mr. Richard Davy for open wounds in the out-patient department is perforated zinc, the metal resting lightly on the sore. The advantages of this metallic dressing are: 1. The dressing does not require to be removed, for it is readily cleansed by pouring water over it. 2. The sore is protected well from injury. 3. Should the dressing be removed by the surgeon, he gives neither pain nor causes bleeding from the granulations. 4. The evaporation from the surface of the sore through the perforations lessens fœtor, and favours healing by scabbing.

It would be a great advance in hospital progress if surgeons were authorized to order more liberally mechanical supports, such necessary appliances to be charged on the hospital funds. A modification of De Morgan's glue bandage has been used frequently, with good results, for those legs damaged by the ulcerative process and varix; but only as a cheap substitute for the cleaner and more convenient elastic stocking.

ST. GEORGE'S HOSPITAL.

Mr. Rouse finds that, as long as the sores are unhealthy, carbolic acid in some form is most useful; but he believes that it is generally used too strong. He finds a drachm to a pint of lead lotion quite strong enough. If the usual form of one in forty or twenty be used the skin becomes inflamed around the sore. When the ulcers become healthy he uses strapping and bandage; if varicose veins be present Mr. H. Lee's method is most satisfactory. Mr. Rouse has treated five or six cases by skin-grafting with most satisfactory results; in fact, he has no doubt that that method is the best of all when the ulcer is healthy. Few patients, however, can spare time to come into the hospital to have this done; and even if they could all the beds cannot be filled with such cases. In cases of chronic eczema and ulcer he treats the eczema with an ointment of ammoniated mercury and carbolic acid. This ointment seems to him to cure the eczema very rapidly.

CHARING CROSS HOSPITAL.

Mr. Bellamy says that the treatment of old standing ulcers of the leg in the out-patient department of a hospital is in general very unsatisfactory, from the fact that the essential adjuncts to therapeutical measures—rest, cleanliness, good food, abstinence from excesses in drink—are impossibilities with the class of patients afflicted. The most frequent form, that complicated with a varicose state of the veins, ap-

pears to be best relieved by a carefully applied bandage commencing at the web of the toes, or by a neatly adjusted method of strapping, maintaining equable pressure. If the patient can lay himself up for a while, the obliteration of the veins usually effects a cure. The internal administration of iron, and if the ulcers be chronic, of opium, is of great use. Lotions of nitrate of silver, sulphate of zinc or copper, on pieces of lint of the size of the ulcer, are useful dressings. In the irritable form, rest, elevation of the limb, at all such times as the patient is not absolutely obliged to use it, water-dressing and poultices, and the administration of iron, seem as good remedies as any. The chronic callous ulcer, which is frequently met with in old people associated with an œdematous condition of the feet or ankles, is greatly benefited by neatly applied strapping, blisters, and by the administration of opium. The local application of the aqueous solution of opium affords great relief. Opium is sometimes given night and morning. Of ointments or lotions, the ointment of nitric oxide of mercury, and zinc or copper lotions, are the best. A rather strong solution of carbolic acid has often been found of great service. Mr. Bellamy has, in many instances, transplanted cuticle, in old standing ulcers among out-patients, with considerable success. The great obstacle is, he thinks, the absolute necessity of the patients moving about to earn their bread, and their want of ordinary attention and of the means of existence in many instances. But the little pieces of transplanted cuticle can be pretty securely held on by being strapped down by the strong waterproof isinglass plaster, and the whole surface covered with lint, also securely strapped on. With the better class of patients—those who help the surgeon, in fact—the plan is often highly successful.

ST. MARY'S HOSPITAL.

Mr. Arthur Trehern Norton says that the majority of ulcers which occur in the out-patient department of a hospital are the result either of insufficient food, or of too long standing, or of varicose veins; and none of these are likely to be relieved by internal remedies. He therefore rarely uses such treatment; but in cases in which syphilis is present, that affection must be treated; and in phagedænie and in painful ulcers, a quarter to half a grain of acetate of morphia three times a day has a marked effect. In so-called varicose ulcers, the wound is itself frequently a cure for the varicose condition of the veins immediately around, but it is necessary that other enlarged veins should be supported. Among local remedies, carbolic acid, used as a lotion, in the proportion of five grains to the ounce of water, is one of the best. But under carbolic acid epithelium will not form. It should be therefore discontinued as soon as healthy granulations are developed. In using carbolic acid, it is necessary to request the patient to apply it to the wound only, and not to allow it to touch the skin around. Mr. Norton has lately painted ulcers daily with a saturated solution of carbolic acid in glycerine, afterwards covering them both with a piece of dry lint. This treatment has been followed by good results. Passing on to other applications, such as calamine, oxide of zinc, and other ointments, astringent lotions, &c., he has found them useful only as changes. Strapping ulcers is very serviceable, but it is difficult to carry out in hospital practice. A great advantage gained by this treatment is a

decrease in the required amount of new tissue by approximating the margins of the ulcer, and consequently a proportionately less chance of recurrence, for this tissue possesses but little vitality and no elasticity, and therefore has a tendency to ulcerate or to rupture during a movement of the limb. With regard to skin-grafting, Mr. Norton has found it impossible to employ this form of treatment with success among out-patients, for without rest the vitality of the grafted piece cannot be maintained. Rest and sufficient food, the greatest necessities in the treatment of ulcers, are wanting in these cases.

Mr. Edmund Owen finds that the greater number of ulcers of the leg which come under his care are dependent on a varicose condition of the venous trunks of the lower extremity; and, as this is usually attended by but little real inconvenience to the patient, he is not readily induced to give them the time and attention necessary for their cure. If, however, the ulcer should be spreading rapidly, or have become much inflamed, or if it should have given rise to much hæmorrhage, his serious attention is then called to it. If the sore be young and small, and treatment be applied before the surrounding integument has been much altered by impregnation from the inflammatory process, a cure may be speedily effected by the application of two or three pieces of strapping around the leg at the seat of the ulcer. The patient must be made aware of the necessity of avoiding much standing or walking, and should be instructed to keep his leg in the horizontal position when at rest. Unfortunately, the nature of the patient's occupation generally precludes the possibility of his following the first part of this advice to any great extent; nevertheless, if the veins of the limb be well supported from without, and the second part of the instruction attended to, a cure may be effected. Thus Mr. Owen has just discharged, as recovered, a hawker who had been for many months the subject of a large varicose ulcer on his left leg, and who was "on the walk" during the whole period he was under treatment. When, under the combined influence of nitrate of silver lotions and strapping, his ulcer had commenced to cicatrize, five grafts were applied to its granulating surface. Although the cure in this case was rapid, Mr. Owen did not think it was accelerated by this procedure.

At the Hôtel Dieu, it was taught by a well-known French surgeon that there was only one method of treating ulcers of the leg—viz., absolute rest and cataplasms. As he never varied his advice nor his treatment, he had a considerable collection of ulcers in his wards: their characteristic feature was flabbiness. Poultices judiciously prescribed at the outset of treatment of the chronic sores, not only cleanse the surface, but, by unloading the small and distended vessels, and procuring resolution of much of the products of inflammation, prepare the way for future applications. After the poultice, and whenever the granulations are coarse, pale, and indolent, a weak solution of nitrate of silver is extremely beneficial. Great advantages, however, may be derived from an occasional change of the nature of the application: carbolic acid lotion, or ointments of nitric oxide of mercury, resin, or oxide of zinc, being employed, as the features of the case may indicate.

In another case, in which the ulcer was of an hour-glass shape, grafts were applied to the lower and larger part of the sore, and both parts

were strapped; that part of the ulcer to which the grafts were applied was the first to become healed.

It is essential to the success of the graft that the ulcer be clean and healthy. In certain cases, the application of three small pieces of epidermis appears to exert a stimulating effect upon the whole ulcer.

When the ulcer is flabby and very foul, "tenax" is a valuable application, at once cleaning and stimulating the sore: it may be applied under a bandage or plaster. The irritable ulcer cannot bear this application, and may be well treated by a lead and opium lotion. If the sore be inflamed and very painful, cold-water dressings are indicated; or great relief may be procured from a poultice on which laudanum has been sprinkled. In every case the local remedies must be supplemented by mechanical, constitutional, and dietetic treatment. The support afforded by strapping is much superior to that of a bandage; for, however well the latter may have been applied in an out-patient consulting-room, it is sure to become loose and useless by the morning (much of the œdema having disappeared during the rest in bed), even if the walk home have not interfered with its efficacy; whereas the strapping, by adhering closely to the integument, may exert sufficient pressure to cause temporary occlusion of the vein, thus taking the place of the valves (now useless on account of their wide separation), and breaking the force of the pressure of the column of blood. Chronic distension of the veins of the lower extremity, which is itself a great incentive to ulceration, is especially apt to exist among ironers and washerwomen who pass the day standing at their work, or drinking weak tea. The indication for treatment in this respect is as clear as it is important. The want of proper food amongst many of the poorer patients is well known: it is worse than useless to prescribe them medicines to increase the appetite when its gratification is out of the question. There is an excellent charity in the neighbourhood of the hospital, called St. Mary's Kitchen, from which the medical officers enjoy the privilege of ordering daily dinners for such of their patients as they may think fit. The relief thus afforded is often of more value than any that the surgeon can order from the dispensary, for those suffering from ulcerated legs.

EDINBURGH ROYAL INFIRMARY.

Mr. Joseph Bell regards rest and graduated pressure by careful bandaging as the chief indication of treatment for all ulcers of the limbs. In cases of callous ulcers, he always begins by blistering the surrounding thick hard edges. In varicose ulcers, black wash, and in eczematous ones, weak alkaline lotions are chiefly used. In fœtid ulcers, he first thoroughly destroys the fœtor by careful soaking in cloths soaked in a strong solution of carbolic acid and water (1 to 40), then rubs the surface with a strong solution of chloride of zinc (forty grains to the ounce), and then dresses the sore antiseptically with carbolized gauze or sulphurous acid lotion. Mr. Bell approves of skin-grafting in every case of extensive ulcer, when once a healthy condition of the granulations has been obtained. He has not found that ulcers aided in healing in this way are at all more liable to recur than after gradual cicatrization from the edges.

ABERDEEN ROYAL INFIRMARY.

Dr. Fiddes endeavours to get the ulcers he has to treat into as healthy a state as possible, chiefly by means of rest and support to the limb. When an ulcer assumes a healthy granulating appearance, he employs skin-grafting and skin-dust, as it is called; and when either of them "catches," the sore is dressed daily with a piece of lint soaked in red lotion —one grain of sulphate of zinc to an ounce of water and a few drops of the compound tincture of lavender, covered with oil-skin and a bandage. He has found the cicatrix following the employment of either skin-grafting or skin-dust to be more durable and lasting—not so apt to break as a cicatrix healed up in the old way.

GLASGOW ROYAL INFIRMARY.

Dr. G. Buchanan says that the general treatment of ulcers is a subject too extensive to call for special remark. He employs rest in the recumbent posture, and moderately good diet, especially vegetables, in the case of women and others who largely substitute tea, bread, and ham, or cured fish, for more wholesome food; and, locally, support by bandaging, and stimulating, soothing, or astringent lotions, as the case demands.

Skin-grafting has been used in the treatment of large ulcers in his wards, and generally with success. To insure a favourable result, it is necessary that the surface of the ulcer be covered with clean granulation, not yielding a copious discharge. The plan which he adopts is as follows. When the graft is to be taken from the skin of a live member, he always takes it from the person who has the ulcer; he does not consider it proper to solicit permission to take it from any one else. The skin is pinched up with a pair of dissecting forceps, and with curved scissors a piece half an inch long and about one-eighth of an inch broad is cut off to the depth of the true skin. This is cut into three or four pieces, and they are at once placed on the ulcer, the granulation having been previously shaped to make the surface raw but not bleeding. A strip of adhesive plaster is made to press the grafts and retain them in their place. The whole ulcer is then dressed antiseptically with a cover of protective oiled silk, over which is applied a bandage of carbolized gauze overlapping the silk by two or three inches, and at least eight folds thick. Under this dressing the grafts may be allowed to lie without the putrefaction of the discharge even six or eight days; at the end of which time it is common to find some if not all of the grafts adhering. Some keep in view till cicatrization begins to spread out from them; others disappear, except that a pale spot indicates where they were; but in most instances the change is perceptible from the place where the graft was placed.

Dr. Buchanan has tried, without success, to engraft epidermic scales scraped from the arm of a healthy person, but has discontinued the attempts.

The most important advance which has been made in skin-grafting is the employment of pieces of skin from recently *amputated limbs.* This he has practised with extraordinary success. The number of pri-

mary amputations in the Glasgow Royal Infirmary is so great that there is never want of opportunity of getting fresh healthy skin, without having recourse to taking it from the living body. As soon as an arm or leg has been removed, for injury, the house-surgeon or dresser carries it to the ward where the case requiring grafting is. He then carefully dissects from the palm of the hand near the wrist, or the sole of the foot near the instep, where the skin is very vascular and the epidermis not too thick and hard, as many pieces as are necessary to do all the grafting required at that time. In taking grafts from a recently amputated member, much larger pieces are used than when taken from the living body—pieces about a quarter and even half an inch square having often been grafted with success. Dr. Buchanan considers that this aspect of skin-grafting has a far more important bearing on conservative surgery than on the treatment of ulcers. He has been enabled to save limbs which formerly he should certainly have amputated, where the destruction to the integument was so extensive as to preclude all possibility of cicatrization, unless by the assistance afforded by skin-grafting.

Dr. Dewar has found the treatment of ulcers by skin-grafting to be very successful. To insure success, he first brings the ulcer into a healthy condition (which is absolutely necessary), with healthy granulations and signs of healing commencing round its edges. The grafts which he uses are from the size of a barleycorn to that of a split pea. Those taken from a recently amputated limb or other part he has found to do equally well with when taken from the living subject. Dr. Dewar has found this form of treatment of great benefit in extensive raw surfaces from burns implicating the flexures of joints, and when the cicatrix is apt to be followed by contraction.

Art. 141.—*Treatment of Boils.*

By Dr. Simon, of Lorraine.

(*Scalpel of Belgium*, Sept. 8; and *The Lancet*, Nov. 16.)

Dr. Simon, of Lorraine, advocates a means of stopping boils and furuncles which he declares simply infallible. It consists in the following procedure:—As soon as Dr. Simon perceives on any part of the surface the characteristic redness of varying form and size, and with a culminating point in the centre which soon passes from red to white, he puts in a saucer a thimbleful of camphorated alcohol, dips the palmar surface of his three middle fingers in the liquid and gently rubs the inflamed surface, insisting especially on the central portion. This little proceeding is repeated eight or ten times, each time occupying about half a minute. The surface is then allowed to become quite dry, and a slight coating of camphorated olive oil is applied, so as to prevent the evaporation of the alcohol. A boil or furuncle seldom, says the author, requires more than four such applications, and often a single one is enough to cause the boil to dry up and disappear. When several applications are needed, they should be made at intervals—say morning, midday, and evening.

The same kind of proceeding is equally successful in whitlows and all injuries of the tips of the fingers. As soon as pain and redness are perceived in the finger, it should be soaked for ten minutes in a small glassful of camphorated alcohol, then well dried, and finally soaked in another glassful of camphorated sweet oil. The relief is immediate, and three applications are generally enough to effect a cure.

Art. 142.—*On a New Method of Treating Ulcers.*

By Philip Cowen, M.R.C.S.L., L.S.A., Resident Medical Officer Islington Workhouse Infirmary, Upper Holloway.

(*The Lancet*, Nov. 16.)

It occurred to Mr. Cowen on reflection, that, from whatever cause arising, whether constitutional or local, an ulcer could be considered as a local asthenia of skin and parts beneath—a local weakness and loss of plasticity, a brittleness where softness, elasticity, and pliancy, yet strength should exist, a local tendency to degeneration and death. Whether the cause was from venous varicosity, or blood pressure from other causes, as indolence, or disease of the liver or heart, or from general decay of the tissues from intemperance or other enfeebling vices, or from senile decay, or want of food, or general feeble constitution, or from scrofula or syphilis; from any of these causes the ultimate result is, in an ulcer, the weakening and giving way of structures whose normal condition is to act as covering and protecting sheaths.

In several of these cases the skin is specially weakened, in others gives way through pressure; and in all cases the skin of the legs, from its depending, weight-bearing position, suffers the most. Knowing, as we do, that an ulcer has power of absorbing matters applied to its surface (any one can try the experiment with black wash to a moderately-sized ulcer for a few days, when mercurial salivation will begin), Mr. Cowen availed himself of so excellent a property by applying locally matters having nutritive powers, so that the skin might be nourished locally at the weakened and degenerate spots, to enable the skin to take up such materials as would nourish its weakness and convert its brittle state into a plastic and healing one.

The natural secretion of an ulcer, the so-called laudable pus, may it not, the author asks, be a nourishing juice specially thrown out to feed the young growing granulations? If so, can we not add to this by artificial manuring?

Such is Mr. Cowen's theory. To carry it out he made the following mixture of glutinous ingredients:—Flour, four ounces; powder of acacia, one ounce; powder of tragacanth, half an ounce; one egg; chalk, two drachms; cold water, one pint. These were all mixed together, and placed on the fire in a saucepan. Just as it began to boil, or after boiling a minute, it was removed, and allowed to cool. If found too thick, it was made thinner by adding a little boiling water, and stirring, so that it was of the thickness of ordinary paste; thin enough to be spread over the ulcer, by means of a little brush, yet so thick that it will remain on the ulcer. Probably

such a mixture is not necessary; either the flour paste alone, or the acacia, might be sufficient; but Mr. Cowen prefers it as it stands. The patient, provided with a pot and brush, thickly paints the ulcer all over three or four times daily, and covers the ulcer with a thin piece of soft rag. No other treatment nor washing is had recourse to, except to remove the rag. To keep the materials sweet, only sufficient is poured into the patient's pot for the day (pot and brush washed daily). The flour, acacia, tragacanth, and the egg, supply the ulcer with all the necessary materials for its repair; the chalk has a further good effect by supplying lime.

With regard to the results. During the six weeks Mr. Cowen tried the remedy, eighteen cases have been so treated, all with the happiest result.

Art. 143.—*On the use of Plaster Splints in Remedying Displacements in Fractures Irreducible by other means.*

Under the care of Dr. Labbé, at the Hôpital de la Pitié.

(*The Lancet*, Aug. 3.)

All surgeons know how difficult it is sometimes to remedy certain cases of oblique fracture of the lower third of the leg, in which the upper fragment projects under the surface. Various apparatus have accordingly been devised for the purpose of preventing this displacement. In France, Malgaigne in such cases used to employ his metallic point, which was fixed into the upper fragment so as to exert a certain degree of pressure, and prevent any fresh displacement. The fixing of the metallic point was attended with some inconvenience; besides, it is a special instrument and not easily procurable. We were therefore struck with the advantages afforded by an ingenious contrivance which we saw Dr. Labbé employ with success a short time ago in his wards at the Hôpital la Pitié.

The patient was a woman aged forty. Whilst in a state of intoxication she had been run over by a gig, and was at once conveyed to the hospital. Fracture of the lower third of the leg was found to have occurred, with very marked displacement of the upper fragment, which projected under the skin and threatened to tear through. A splint was immediately applied by one of the house-surgeons.

As the woman was labouring under delirium tremens, it was found necessary to use the strait-waistcoat, and strong doses of opium were administered. However, in consequence of the restlessness of the patient the upper fragment of the tibia projected more and more under the skin, so that it became necessary to use some means to prevent its issue through the surface. Accordingly the apparatus was modified, and a cushion placed under the heel, but to no effect, and there was imminent danger of the fragment lacerating the skin. It was at this time that Dr. Labbé first saw the case, and with a view of definitively remedying the displacement and preventing deformity, he applied a plaster splint in the following manner:—Reduction was first performed with the greatest care. As soon as this was completely effected the

plaster splint was applied so as to cover the sole of the foot, the heel, and the whole of the posterior surface of the leg. The assistants were then requested to continue extension, counter-extension, and perfect apposition of the fragments, until the plaster had become hard. At the end of half an hour the apparatus was sufficiently solid. From that moment all anxiety about a breach of surface ceased, and notwithstanding the disorderly movements of the patient, which continued two days longer, consolidation took place so perfectly that it was quite impossible to make out the seat of the fracture.

Art. 144.—*On the Sensibility observed after Section of the Sensory Nerves of the Face.**

By Dr. Letiévant, of Lyons.

(*Gazette Hebdomadaire*, No. 40, 1872.)

The author having had occasion, about eight months previously, to divide for the treatment of a rebellious facial neuralgia, the infra-orbital, buccal, and inferior dental nerves, an operation which was followed by immediate and complete success, observed in the regions supplied by these nerves phenomena of sensibility which he thinks were interesting and not much known. From this case, and a few others, reported by Wagner and Burns, he believes that he is able to conclude that after section of a facial sensory nerve, there may exist in the parts supplied by this nerve a special sensibility which M. Letiévant explains by the action of the nervous papillæ of the skin and the more or less numerous anastomoses received by the divided nerve along its extra-cranial tract.

This sensibility cannot be explained by a nervous regeneration, for it has been observed to come on about six hours after the section. It is subjected to irregular oscillations, which the author explains by an inflammatory swelling of the tissues, or by a local numbness arising from the sudden passage of neuralgic over-excitability to an absolute non-excitability; finally, it is never so perfect as the normal sensibility.

These cases ought to put us on our guard against certain cases of nervous regeneration, and ought to dissipate the doubts of surgeons who hesitate to practise neurotomy for fear of producing persistent paralysis of sensation.

Art. 145.—*On the Supply of Motility and Sensibility after Section of Nerves.*

By Dr. Letiévant, of Lyons.

(*Gazette Médicale de Paris*, No. 38, 1872.)

This communication was made to the Medical Section of the French Association for the Advancement of Science, held at Bordeaux in September, 1872.

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* Read before the Medical Congress of France held at Lyons.

The author alludes, in the first place, to cases where, in consequence of division of a mixed nerve, there may be observed in the parts supplied by this nerve, instead of complete paralysis, a persistence of a certain degree of motility and sensibility. The explanations which have been given of facts of this kind, assume a regeneration of the nerve or of its anastomoses. M. Letiévant, however, proposes a new explanation.

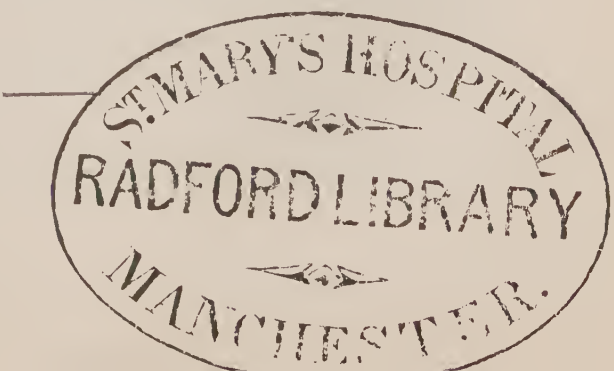
He quotes a case of a man who had an attack of tetanus after a wound of a terminal branch of the median nerve. This nerve was divided, the patient recovered and retained both motility and sensibility in the region supplied by the divided nerve. Still there had been no union of the two ends. M. Letiévant studied and analysed in the following manner the phenomena which were observed by him:—

Motility.—The muscles supplied by the median nerve were paralysed and atrophied, and yet in them movements were possible. But pronation was made with the help of the shoulder-joint, flexion of the wrist by means of the flexor carpi ulnaris, flexion of the middle finger in consequence of the anastomosis of its flexor tendon with the flexor tendon of the ring finger, flexion of the index finger through the radial extensor muscles of the wrist which straighten the hand, and even with the concourse of the extensor indicis: these muscles, by bringing backwards the wrist and the index finger, cause a movement of flexion in the flexor tendon of the index finger, as it acts upon this digit like a passive cord. Flexion of the thumb is produced in the same way by means of the long abductor and the extensor of the thumb.

Thus the motility in this case was due to the action and assistance of accessory muscles.

Sensibility.—The sensibility, though obtuse, still remained in the middle finger. The sensation of touch was possessed in all the region supplied by the median nerve, the sensations of pain and of temperature were also retained in all parts except at the extremity of the index finger. These facts might be attributed to the existence of anastomoses, but M. Letiévant prefers to explain it by supposing the perception of sensations by means of neighbouring filaments from the radial nerve. He mentions an experiment which shows that one finger of a person, placed exactly between two fingers of another person, communicates to the latter the impressions which it receives. There is nothing astonishing then in the supposition that the filaments of the radial nerve on the dorsal surface of the fingers may be excited when one acts upon the palmar surface. Education would develop this sensibility. Thus, in the patient in question, nineteen months after section of the median, it was difficult to believe that any operation of the kind had been practised.

M. Letiévant has observed similar facts after section of the radial, ulnar, and sciatic nerves. In all the cases the sensibility presented at first was very dull, but afterwards was much improved by exercise.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SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 146.—*On the Treatment of Head Injuries.*

By THOMAS BRYANT, F.R.C.S., Surgeon to Guy's Hospital.

(*The Practice of Surgery*, pp. 1088. London : 1872.)

Having carefully considered the whole subject of concussion and injuries of the brain, including compression and extravasation of blood with or without fracture of the skull, the following inferences—Mr. Bryant writes in his excellent manual, just published—may be fairly deduced :—

General conclusions.—1. Injuries of the head are of importance only so far as they involve the cranial contents—a simple uncomplicated case of fracture of the skull being of less danger than a general concussion of the brain.

2. A slight concussion of the brain, associated or not with a fracture of the vault or the base of the skull, which manifests itself by a slight or passing suspension of the cerebral functions, generally does well.

3. A severe concussion or shaking of the brain, associated or not with a fracture of the vault or the base of the skull, is liable to produce contusion or laceration of the brain substance, either upon its surface or within its ventricles, with more or less extravasation of blood, and when the vessels are diseased, a copious hæmorrhage often follows a slight injury.

4. In cases of severe concussion of the brain, the cerebral structure is at least as much injured by *contre-coup* as at the seat of injury, the base of the brain suffering the most. Fracture by *contre-coup* does not take place.

5. A fall upon the vertex from a height, or a blow upon the head from a blunt instrument, may be followed by fracture of the skull, or not; such an accident produces, as a rule, a general concussion of the brain, with such complications as contusion or laceration of the brain, and effusion of blood either upon its surface or within the ventricles.

6. Falls upon a pointed object, and blows with a sharp instrument, as a rule, are followed by a local fracture; and if the brain be injured, it is at the seat of injury. As a consequence, the symptoms may be accounted for by local causes only, and the surgical treatment directed by local considerations.

7. When symptoms of compression of the brain immediately follow an injury to the skull produced by a fall from a height, or a blow from a heavy and blunt instrument, the cerebral injury will be general, the brain contused and lacerated, particularly at the base by *contre-coup*, and if extravasated blood be found external to the dura mater, blood will also be found upon the surface of the brain, or within its membranes.

8. If symptoms of compression of the brain follow a local injury pro-

duced by a fall upon a sharp object, or a quick blow from a pointed one, such symptoms, as a rule, are produced by local causes, such as depressed bone, or extravasation of blood from rupture of the middle meningeal artery.

9. Such local injuries, when they give rise to marked or persistent symptoms, should be treated by elevation of the depressed bone; but if no general symptoms are present, unless the bone be comminuted and can be easily removed, no operation is indicated; a local pressure of the brain by bone, although severe, uncomplicated with symptoms, generally doing well.

10. When compression of the brain follows a local injury over the course of the meningeal artery after an interval of time, and when reaction has been established, although no depressed bone be present, the operation of trephining may be performed with a chance of success, the blood, often, however, passing downwards towards the base, where the operator cannot reach it.

11. When compression of the brain follows, as a secondary result, a general injury—although that compression is evidently produced by extravasation of blood—the operation of trephining is useless, if not injurious; for although blood may be effused from rupture of a meningeal artery, there will certainly be found some contusion or laceration of the brain itself, or extravasation beneath its membranes, which the operation cannot relieve.

12. Encephalic inflammation may follow any concussion or injury to the brain, however slight, whether complicated with fracture or not; and the danger of such a result is in proportion to the encephalic injury. In cases of contusion or laceration of the brain, with extravasation of blood, it is almost sure to follow, and, as a rule, it will produce a fatal termination. This inflammation may appear within a few hours of the accident, or it may be postponed for some days; it may be very rapid in its course, or very insidious in its nature. If the brain itself is the seat of the disease, it is generally insidious, giving rise to either a diffused or local abscess; but if the membranes are involved, effusion, convulsions, coma, and death will rapidly take place.

13. The operation of trephining is perfectly useless in cases of severe concussion of the brain, whether associated or not with fracture, although it may relieve compression arising from local conditions; for the brain is generally injured by *contre-coup* at its base, or in positions where no operation can be o benefit, but must prove injurious.

14. The operation of trephining is only of value in local injuries to the skull, when associated with symptoms of compression from depression of bone, or the local extravasation of blood between the bone and the dura mater.

15. Fractures of the base of the skull may take place alone, and be marked by only special symptoms; they may be associated with, and are generally found in, all cases of severe fracture of the vault, when produced by a heavy fall or blow, the fissures radiating downwards in a direction parallel to the forces employed.

16. Fractures of the base may be complicated with encephalic injuries similar to fractures of the vault, and may consequently be manifested by general symptoms as well as special ones; in severe cases the

former completely masking the latter. The injury, however, may generally be diagnosed, the mode of its occurrence indicating the probability of its nature.

17. All injuries to the head should be treated with extreme care and regarded as serious. Rest in the horizontal posture, freedom from excitement, bland, nutritious, unstimulating food are essentials under all circumstances, the great principle of practice being to ward off excess of reaction or inflammation of the cranial contents.

Art. 147.—*A Case of Tuberculous Ulceration of the Tongue.**

By M. Féréol.

(*Gazette Hebdomadaire*, No. 31, 1872.)

The man who was the subject of this case had been tuberculous for about eight months. He presented no symptoms of antecedent syphilis. Fifteen days before he came under the care of M. Féréol he found out the existence of a small painful tubercle near the tip of the tongue on the left side. The patient had been an excessive pipe-smoker, and he had several bad teeth and also stumps which might have readily wounded the tongue. Several other tubercles made their appearance in the neighbourhood of the first, and slowly ulcerated. At the time of his admission under M. Féréol the ulceration presented the following characters: irregular in form, it extended transversely from the middle of the left half of the upper surface of the tongue and passed round the left edge of the organ and involved the lower surface. At the upper part of the tongue the ulcer had the aspect of a fissure with well-marked jagged and slightly undermined edge. The base of the fissure presented about a dozen rounded and nipple-shaped projections of a violet or rose colour, which were compressed together. On the inferior surface of the tongue the ulcer was larger, of an oval shape, and with a greyish-coloured base speckled with yellowish pultaceous deposits. Here the ulcer was less deep, its edges were not so sharply defined, and were surrounded by intensely injected mucous membrane. The surface of the ulceration was unequal, undulated, but not studded by nipple-shaped growths. The ulceration extended to the glosso-gingival groove, and formed a small narrow raw surface of a yellowish-grey colour, and studded with yellowish spots which were the ulcerated orifices of the mucous glands.

The whole of the ulcer was supported by a slightly hardened base, which rendered the left half of the tongue thicker than the right half. The sub-maxillary glands were slightly enlarged and painful. M. Féréol had the teeth filed, and ordered the continuous application to the ulcer of small plugs of charpie dipped in a solution of chlorate of potash. Under this treatment the ulceration underwent modification. The nipple-shaped protrusions disappeared and left a depression, at the bottom of which could be perceived, on separating the edges of the

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* Communicated to the Société Médicale des Hôpitaux, Paris.

wound, the muscular fibres of the tongue. The lower part of the ulceration seemed to proceed towards cicatrization, but though there was apparent contraction of the ulcer in its totality, it was made out that the ulceration had extended downwards. The muscular fibres were exposed, and there was considerable undermining of the edges of the raw surface. The induration at the base of the ulcer had almost entirely disappeared and the glands could hardly be felt. The yellowish follicular points still persisted about the ulceration.

At this period a small antero-posterior fissure, of a greyish colour and with an indurated base, made its appearance on the lower lip, near the right commissure, at the point where the man was in the habit of holding his pipe. At first this fissure increased in all directions, but on the application of chlorate of potash became modified.

What was the nature of this ulceration? M. Féréol rejects the idea of a chancre or of a syphilitic gummatous ulcer, of epithelioma, and of simple traumatic ulceration caused by bad teeth, and he admits the tuberculous nature of the ulceration. M. Trélat, who examined the patient, thought otherwise. The bad state of the teeth and the frequent contact of a pipe with the tongue he considered to be the probable exciting cause, but at the same time he allowed that the diathesis of the patient had impressed on these lesions special characters which correspond to all the descriptions of tuberculous ulceration of the tongue.

M. Cornil, who examined microscopically small fragments of the ulcer removed by scissors, made out the following:—1st. The vegetations, which were continuous with the lingual mucous membrane at the edges of the ulcer, were hypertrophied lingual papillæ, the anatomical elements of which had not undergone any alteration. 2ndly, the granulations which occupied the base of the ulcer were ordinary fleshy granulations with the well-known structure of inflammatory granulations (round embryonic cells disposed side by side in a granular amorphous substance); these granulations were very vascular. 3rdly, a small greyish mass taken from the surface of the ulcer was also composed of vascular embryonic tissue.

Art. 148.—*On Epithelial Cancer of the Tongue.*

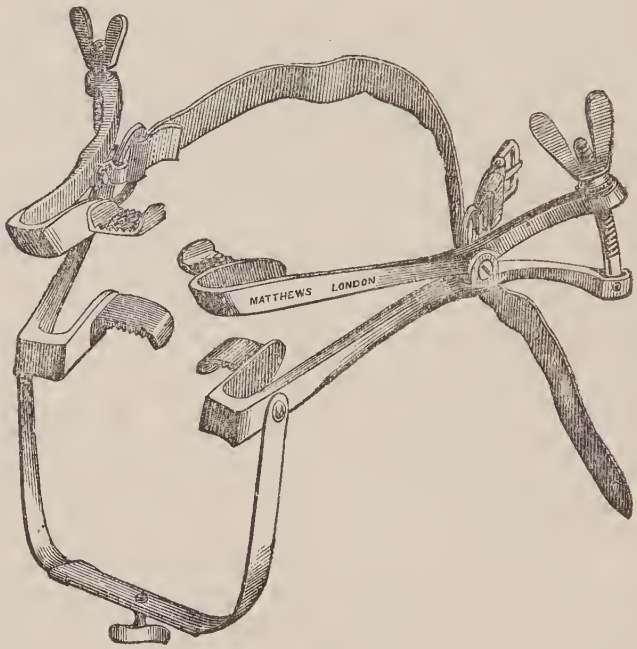
By John Wood, F.R.S., Surgeon to King's College Hospital and Professor of Surgery in the College.

(*The Lancet*, September 28.)

To remove the disease, the least painful, most manageable, and most effective plan is, Mr. Wood states, by the application of the knife or scissors. Caustics in this situation work too slowly and superficially, and too painfully and uncontrollably to be valuable in any other way than as secondary to the absolute removal of the diseased mass. Used in this way they are of great value, and are always employed by Mr. Wood in the form of the solid or a saturated solution of the chloride of zinc, sometimes combined with the perchloride of iron, and frequently applied to destroy any remains of the disease which may have escaped the knife. The latter has also the additional advantage of stopping any

bleeding which may still further lower the resisting powers of the patient to the invasion of the disease.

Up to the present time the operation for the removal of the tongue or any part of it has been considered by most surgeons as one of those in which the blessings of anæsthesia could not with safety be afforded to the patient, for reasons which will be at once apparent—viz., first, the removal by the anæsthetic agent of the voluntary assistance which the patient can render in all operations upon the interior of the mouth, by keeping the jaws and mouth wide open and the tongue steady; and secondly, the supposed danger, in profuse bleeding into the pharynx, of suffocation by the blood passing into the larynx and trachea. It is very evident that if we cannot in these cases offer to our patient a means of relief unattended by immediate pain, and that of a most severe character, at least half of the advantages of, and inducements to, the treatment involving such an operation are thrown away, and patients will be naturally indisposed to listen to the only promise of relief which can honestly



be held out to them. If, then, we can render by any means the necessary operations painless, we confer a boon on humanity not by any means small to the poor creatures thus afflicted.

By the use of the instrument made for Mr. Wood by Messrs Matthews, a perfect and steady command over the jaws is obtained, without encroaching upon or interfering with the cavity of the mouth. (See figure.) It consists of four teeth plates, which act on both sides upon the upper and lower bicuspids by means of a pair of powerful cross levers, placed outside the cheek, and opening independently of each other by a screw on each side through a simple hinge joint. Combined with these levers as they bend into the mouth is a groove to receive the angles of the lips, which are thereby kept wide apart, and out of the way of the

light, which is so necessary in securing bleeding arteries in a deep cavity like the mouth. The two sides of the instrument are connected and kept together by a bent piece of metal, which passes under the chin altogether out of the way of the operator, and which is capable of being adjusted to the width of the lower jaw by a sliding groove and fixed by a screw. The whole is held firmly upon the patient by a strap passing round the back of the neck and buckling on to the opposite piece. This instrument has been adopted after a great many trials of different kinds of gags, including that most valuable one for operations upon the palate invented by Mr. Thomas Smith, but which, from the embarrassing presence of the tongue-plate, proved inadmissible in operations upon the tongue. In some respects the present instrument resembles this, and the differences are mainly such as refer to leaving free the tongue and holding the lips well stretched out. The gag is equally effective in operations upon the tonsils and larynx, and Sir W. Fergusson employs it, with entire satisfaction, in cases of staphyloraphy.

Having obtained the necessary control of the movements of the patient's lips and jaws during the insensibility produced by chloroform, we have only to look to those precautions against bleeding and the passage of blood into the larynx which are usually found most efficacious, such as turning the head down to one side and clearing the throat with the finger. If the knife be used the tongue must be held well out of the mouth by a good-sized vulsellum forceps, with hooks sufficiently large and widely placed to prevent their tearing out of the sound fleshy substance of the tongue into which they should be inserted. If the tumour is likely to be very vascular, as may be in some measure divined from its appearance, Mr. Wood has usually passed first a stout ligature across the ranine arteries under the base of the tongue, by means of a curved needle in a handle—the one, in fact, which he devised for the performance of the operation for the radical cure of hernia. This controls the hæmorrhage until the cut ends of the vessels have been secured. The tumour is next seized by a pair of stout double-toothed lion forceps, known as Wilcox's forceps. Mr. Wood has found these by experience to be less apt to slip than any other he has tried. Then a curved, sharp-pointed bistoury, to transfix the tongue close to its base, and to cut first antero-posteriorly and then laterally across the vessels and nerves, will suffice rapidly to clear away the diseased mass. In securing the arteries much steadiness on the part of the assistant is required. The muscular substance of the tongue is so friable under the circumstances that it is readily broken down by too much vigour in drawing the knot; while the depth at which the cut vessels lie from the surface necessitates dexterity in slipping the thread over the forceps, the points of which should be conical and taper quickly to the end. The proper tying of the vessels, and the prompt application of the tincture of the perchloride of iron and chloride of zinc by a strip of lint tied round a stick, will render the use of the actual cautery rarely necessary to subdue the hæmorrhage. Mr. Wood adds that it is astonishing how rapidly the patients recover after this operation; and, if too much blood has not been lost, how soon they regain strength and a more healthy appearance. Freedom from pain, undisturbed rest at nights, improved appetite, and reinvigorated digestive powers account for this satisfactory result.

Art. 149.—*On Transplantation of the Cornea.*

By Henry Power, F.R.C.S.

(*Medical Times and Gazette*, August 10.)

At a meeting of the International Ophthalmological Congress, Mr. Power gave an account of transplantation of the cornea. After briefly recording previous attempts to transplant the cornea—some as early as 1823—the speaker described the first suggestion of the idea to his mind, his preliminary experiments on animals at the Brown Institution, and the method which he has adopted in several cases in the human subject. He removes a portion of the opaque cornea of the patient with a special sharp punch, obtains a portion of a healthy rabbit's cornea exactly corresponding by the same means, and transfers it to the space in the human eye, which it of course accurately fits. The lids are fixed together, and in a week union is complete. Whether the portion transplanted will become perfectly clear he cannot yet, from want of experience, say. Mr. Power exhibited a patient on whom he had lately operated with promising results. He submitted the operation to the members for trial and improvement.

Art. 150.—*Canthoplasty in Conjunctival and Corneal Affections.*

By H. Althof, M.D.

(*New York Medical Record*, March 1.)

At a recent meeting of the Medical Society of the County of New York, Dr. H. Althof read a paper entitled "Clinical Notes on Diseases of Conjunctiva and Cornea." Its main object was to call attention to an important element, hitherto rather neglected in the therapeutics of these affections—viz., the diminishing of the pressure of the lids upon the globe. After a review of the present methods of treating the more serious forms of conjunctival disorder—granular lids, diphtheria, blennorrhœa, &c.—all of them only partially under the control of the physician, Dr. A. entered more directly upon its special subject.

Thus far, three different procedures had been occasionally followed for the purpose of relieving the ball of the eye from excessive pressure—viz., incisions or excisions of chemotic conjunctiva; removal of a triangular piece of skin (down to the muscle) from the upper lid; and splitting of the outer angle. This last method undoubtedly suited best, but its good effect was very transitory, the wound healing up in too short a time (a couple of hours) to give any permanent relief. If, therefore, a way could be found to modify this remedy so as to make its results lasting, the therapeutic means at our disposal would receive a valuable addition. This Dr. Althof thought to have been found in the little operation known under the name of *canthoplasty*—the splitting of

the external commissure down to the conjunctival sac, and careful uniting of the conjunctiva to the outer integument.

The results of this simple procedure had been very favourable, a large number of cases at present testifying to its efficiency. It had rapidly become popular in our great infirmaries, and was now, after five years' trial, considered by American oculists a very welcome remedy in cases which had baffled the most skilful efforts, and in diseases against which the prevailing treatment was almost powerless. Granular lids and phlyctenular conjunctivitis and keratitis furnished the great majority of cases, in which canthoplasty might be employed with advantage—to cut off acute attacks, to diminish the number of relapses, or prevent them altogether, and to give other remedies a better chance of effecting a perfect cure. In genuine diphtheria the doctor thought it almost indispensable; and blennorrhœa in its most acute and destructive forms lost most of its dangers.

Art. 151.—*Treatment of Pterygium by Transplantation.*

Under the care of Mr. George Lawson.

(*Medical Times and Gazette*, June 22.)

The following case is illustrative of a very efficient method of treating pterygium, and as four years have elapsed since the operation was performed on the one eye of this patient there is reason to believe that the cure is likely to be permanent.

John K., a young man, aged thirty-four, came to the Royal Ophthalmic Hospital four years ago with a well-marked pterygium in the right eye, and one commencing in the left. Mr. Lawson treated the pterygium in the right eye, by transplanting the apex of the growth from the cornea to the conjunctiva in the lower region of the eye. This operation is easily and rapidly performed, and the result most satisfactory. The man suffered only a few days' inconvenience from the operation; the pterygium in its new locality steadily shrunk away, and has never since given any annoyance. The pterygium in the left eye, which four years ago was very small, had now considerably increased, and it was for the purpose of having this eye similarly treated that the man again applied to the Hospital. Mr. Lawson accordingly adopted the same method of transplantation, and in a week the patient was able to return to his work.

The great advantage which transplantation of the pterygium offers over excising the growth is that there is no loss of conjunctiva, and consequently no cicatrix on the inner side of the eye to cause a limitation of the movements of the globe outwards.

Art. 152.—*The Art of Tinting Opacities of the Cornea.**

By C. Bell Taylor, M.D.

(*British Medical Journal*, August 24.)

The author pointed out that, by means of fine needles or a grooved instrument manufactured for the purpose, unsightly opacities of the cornea may be so tattooed or tinted over with Indian ink and various other substances as to be indistinguishable from the neighbouring black pupil. Not only is the deformity thus removed, but the sight is also improved, owing to the suppression of the diffusion of light. The method is almost painless, free from danger, and easy of execution. When nearly the whole of the cornea is opaque it is easy to restore a natural appearance by tattooing a central black pupil; and after iridectomy, extraction of cataract &c., the dazzling, if excessive, may be limited by tinting a portion of cornea so as to constitute a permanent shade. It is not necessary to confine the patient or close the eye. When a solution of lampblack and nitrate of silver is employed one sitting suffices. The opacities should be tattooed obliquely, beginning from below. An interesting case was shown in which, after the formation of an artificial pupil and subsequent abscission of a staphylomatous cornea (which operation restored tolerable sight and the normal contour of the globe), a natural appearance had been restored to the eye by tattooing a central pupil.

Art. 153.—*Treatment of Granular Lids and Conical Cornea.*

By Charles Bader, Assistant Ophthalmic Surgeon Guy's Hospital.

(*Medical Times and Gazette*, August 10.)

At a meeting of the International Ophthalmological Congress Dr. Bader exhibited a patient who had been the subject of apparently hopeless pannus from granular lids, in which the left eye had been treated for nine months with quinine applied locally. The immediate effects of this were suppuration occurring within five minutes of its use; the other eye was not thus treated, and though formerly it was a much better eye than the other the latter was now the better of the two. He also exhibited two other cases—one of tattooing corneal opacity, the other of conical cornea, in which the projecting portion was shaved off, the lids closed over the wound, and slight compression used. No synechia followed, and the contraction of the wound so altered the form of the corneal surface that vision became greatly improved. He formerly brought the edges of the wound together by sutures, but had abandoned that practice for the simpler plan just described.

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* Read before the British Medical Association.

Art. 154.—*Treatment of Entropion.*

By James Martin.

(*British Medical Journal*, September 7.)

Mr. James Martin's son, Dr. John W. Martin, has brought under his father's notice a plan which he saw adopted in such cases by Dr. De Wecker, of Paris, and from which he has had exceedingly good results. It is easily performed, gives little trouble to the patient, and leaves, to Mr. Martin's mind, a better-looking eye than that from which the tarsus has been removed.

The point where the inversion is worst and doing most mischief is noticed; and, as near to the edge of the tarsus as possible, the point of a small curved needle, armed with a flaxen thread waxed, is inserted, and carried beneath the loose textures of the eyelid as near to the supra-orbital ridge as tact and judgment show to be desirable. The needle being brought out, the ends of the suture are tied firmly with a double knot over the intervening skin; the ends are cut off; and the ligature is left to ulcerate out, which it will do in six or eight days. A wet compress may be applied. When all irritation in the lid has subsided, an examination should be made to find out if there be another point requiring a repetition of the stitch. Many cases require three or four stitches, but two generally answer.

Art. 155.—*On Sympathetic Ophthalmia.*

By M. Warlomont.

(*Medical Times and Gazette*, August 3.)

At a meeting of the International Ophthalmological Congress on August 1st, M. Warlomont, of Brussels, read a paper "On Sympathetic Ophthalmia."

1. When an eye has been destroyed, either by accident or disease, or when the globe has become atrophied from either cause, if it remain painful, or even tender to the touch, or if it manifest signs either of acute or chronic inflammation, it may give rise to sympathetic phenomena in the other eye. These sympathetic phenomena may even exist without any appreciable irritation of the eye originally affected. 2. In both cases, whether from injury or disease, it is important to enucleate with as little delay as possible after the manifestation of the first signs of sympathetic mischief. When the sympathetic influence has caused an irido-cyclitis, with exudations, enucleation is almost useless, because it has been delayed too long. 3. When an eye has been destroyed by an injury, it is very much for the advantage of the patient that enucleation be performed under chloroform with as little delay as possible. He is in this way preserved from the consequences that too often follow from this form of injury. Enucleation, therefore, as a preventive measure deserves to be encouraged.

Art. 156.—*Treatment of Chronic Conjunctivitis.*

By J. H. Hollister, M.D.

(*New York Medical Record*, September 16.)

Dr. Hollister mentions a case of chronic conjunctivitis which was rapidly cured by the application of an ointment of the biniodide of mercury to the outside of the eyelids.

Art. 157.—*On Optic Neuritis.*

By Dr. De Wecker.

(*Medical Times and Gazette*, August 3.)

At a meeting of the International Ophthalmological Congress at the Royal College of Physicians, on August 1, Dr. De Wecker, of Paris, read a paper "On Optic Neuritis," which he attributed to an effusion of fluid within the optic nerve sheath, the pressure of which produces the atrophy, and the other symptoms, which he proposed to relieve by neurotomy of the optic nerves. He makes an incision between the exterior and inferior recti muscles down to the sclerotic and dislocates the globe by a spatula, making an incision through the sheath one centimetre behind the globe. He had done the operation in two cases with relief.

Art. 158.—*On a New Method for Extraction of Cataract.*

By R. Liebreich, M.R.C.S., Ophthalmic Surgeon at St. Thomas's Hospital.

(*St. Thomas's Hospital Reports*, vol. ii. 1871.)

The distinctive peculiarities of Mr. Liebreich's method are, that the section is made in a downward direction and lies entirely (except the points of puncture and counter-puncture) within the cornea, and that there is no iridectomy. The instruments employed are a very small Graefe's knife, a cystotome, and a common Daviel's spoon, all of which may be combined in a single handle. The patient is placed on his back, the pupil having been previously dilated with atropia, and chloroform may be administered if necessary; the surgeon stands behind the patient's head to operate on the right eye, and at his left side to operate on the left eye.

"Supposing the right eye is to be operated upon. In that case the operator takes hold of the upper eyelid with the index finger of his left hand, whilst he slightly presses the middle finger against the inner canthus of the eye. The knife held in the right hand with its back horizontal and backwards, the plane of the blade making with the horizontal meridian of the eye an angle of about 45°, enters the sclerotic with its point about one millimetre externally to the margin of the

cornea. . . . *Without altering the direction*, the knife passes through the anterior chamber in order to make the contra-puncture on the opposite side, so that the point of the knife becomes visible in the sclerotic, about one millimetre (or less) distant from the cornea. The knife is now pushed forwards, so that its retraction finishes the incision. As soon as the incision is made the eyelid is to be dropped.

"The second part of the operation consists in the careful opening of the capsule.

"In the third part, Daviel's spoon is slightly pressed against the inferior margin of the cornea, and the index finger of the left hand, which holds the upper eyelid, through it exerts a very slight pressure on the highest point of the cornea. Thus the lens is made to rotate a little, its lower margin presses in the manner already described against the posterior surface of the iris, pushes the iris forward, passes along it to the margin of the pupil, overcomes the obstacle, and places itself freely in the wound, which is made to gape by Daviel's spoon pressing against it. A slight pressing movement of the index finger of the left hand, by means of which the upper eyelid is shifted from above downwards over the cornea, serves to expel the lens. Similar movements of the lids are employed for the purpose of forcing out any *débris* of the cortical substance, after pushing them from behind the iris towards the pupil, by gently rubbing the shut eyelids. Should the pupil then not appear round, but its margin drawn towards the wound, it regains its normal position by an outward shifting of the lower lid; or, if that be not sufficient, by the introduction of Daviel's spoon."

The after-treatment consists in the instillation of atropia, and the application of a compressing bandage.

Art. 159.—*On Syphilitic Iritis.*

By Prof. Hermann Schmidt, of Marburg.

(*Berliner klinische Wochenschrift*, ix. 23, 1872; *Schmidt's Jahrbücher*, No. 7, 1872.)

Professor Schmidt's remarks are based on thirty-four cases which were treated in hospital. Of the subjects thus affected twenty-four were females and ten males. The ages varied between twenty and sixty-one years. In one case only were both eyes affected from the first, in thirteen cases the second eye became affected after the first; the right eye was affected in thirteen, and the left in five cases. In three cases one eye was affected with iritis and the other with retinitis.

The great number of complications in these cases was remarkable. In seven instances the patient was affected with the so-called condylomata, in four instances there was descematitis, in four instances there was circumscribed deep-seated inflammation of the cornea, in seventeen instances opacity of the lens, and in six instances retinitis. In the majority of instances—in twenty-four patients—there were existing syphilitic affections of the skin and mucous membrane; in the remaining cases there was only enlargement of the lymphatic glands.

The clinical importance of syphilitic iritis consists in its tendency to result in plastic exudation over the region of the pupil, and in adhesion of the iris to the capsule of the lens. Hyperæmia very rarely occurs with this form of iritis. Pain is frequently a very prominent symptom, and was absent in one case only of the thirty-four. The occurrence of nocturnal pain is not a characteristic symptom of this form of iritis.

The treatment of the syphilitic iritis in these cases was exclusively mercurial. Usually inunctions or injections (under the skin of the dorsal region) were practised. Less frequently mercury was administered internally. Professor Schmidt has never seen any bad results from the injection of corrosive sublimate. In some cases there was marked improvement after three or four injections. In one case an iritis condylomatosa was cured after nine injections. Simultaneous local application of atropine was never neglected. The average duration of the treatment was between five and six weeks; the relapses were cured more speedily, and often these required no constitutional treatment.

With regard to its influence on sight syphilitic iritis is to be considered as a dangerous affection. Of thirty-seven eyes closely examined after the cessation of every inflammatory symptom, in nineteen only was there even fair acuity of sight. In nineteen patients the acuity was much diminished. Bad results are most frequently produced by condylomata. In two cases the iritis was followed by chronic cyclitis and softening of the bulb.

Art. 160.—*A Simple Method for Removing Cystic Tumours from the Eyelids.*

By J. J. Chisolm, M.D., Baltimore.

(*Canada Medical Journal*, July.)

It is a modification in the use of the nitrate of silver that Dr. Chisolm has found so effective in the treatment of sebaceous cysts of the lid, and which has enabled him to discard for many years the tedious, painful, and sometimes dangerous cutting out of such tumours. If the tumour be a sebaceous cyst, located between the upper portion of the tarsal cartilage and the skin, a Desmarres' ring forceps is used as a clamp upon the lid, to shield the ball of the eye from injury, to fix the tumour, and to prevent annoying oozing of the blood. Under this ring-pressure a small opening is made into the cyst, through which its contents are squeezed out. The end of a small silver probe, dipped in nitric acid, is then passed into the cavity, is made to pass over the epithelial lining surface, and is withdrawn. Usually, in its passage into the cavity of the tumour, it cauterizes sufficiently the lips of the incision to prevent any oozing of blood when the clamp forceps is removed. When the cyst is formed by the closure of a Meibomian duct, the better plan is to evert the lid and make the puncture from the conjunctival surface, the caustic being applied as directed. The advantage gained by this modification is in the more certain, thorough,

and yet restricted application of the caustic, confining its cauterizing influences only to those portions in which action is desired. The results are in every case satisfactory. No after-treatment is needed.

Art. 161.—*On Orbital Abscess.*

By Archibald Hamilton Jacob, M.D. Dub. Univ., F.R.C.S.I., Chief Surgeon to the Dublin Infirmary for Diseases of the Eye and Ear; and Ex-Ophthalmic Surgeon to the City of Dublin Hospital.

(*Medical Press and Circular*, Sept. 4.)

The occurrence of an abscess within the walls of the orbit may be either acute or chronic. The acute form is always the result of orbital cellulitis, or inflammation of the cellular bed on which the eyeball lies, and it is, therefore, attended with very serious inflammatory symptoms and very active symptomatic fever. Its causes are fourfold—viz.: 1. Wounds, with or without impaction of foreign bodies. 2. Exposure to sudden changes of cold and heat. 3. Metastatis, or the deposit of pus in cases of pyemia, phlebitis, erysipelas &c. 4. Periosteal inflammation.

Mackenzie says that erysipelatous inflammation, spreading from the eyelids to the cellular membrane of the orbit, sometimes terminates in abscess within that cavity or effusion of matter within the orbital capsule. This appears to be one of the modes, perhaps the most frequent but least suspected mode, in which erysipelas of the face or scalp proves fatal. The fatal result, under such circumstances, is generally ascribed to effusion within the head, but may happen without any inflammatory affection of the membranes or substance of the brain being detected after death. In such cases the formation of matter within the orbit sometimes takes place suddenly, at other times slowly and insidiously.

Stellwag von Carion remarks that also orbital abscess occurs not unfrequently in the course of purulent meningitis, from the inflammation passing through the orbital fissures to the loose connective tissue of the orbit, and in such case usually occurs on both sides; and Fischer further observes that it may arise from a local deposit of tubercle.

Symptoms.—Though the formation of an orbital abscess by violence is generally immediate, sometimes an interval of several days may elapse between the injury (if the abscess be traumatic) and the result. The onset commences, especially in the metastatic form, with a rigor. The eyelids become red and distended with serum, and pain in the brow sets in with gradually increasing severity, and generally in paroxysms. When the orbital inflammation is deeply seated and not very intense the swelling of the lids and conjunctiva frequently bears the character of pure œdema. When it is intense or superficial, however, it often appears erysipelatous and is hot, tense, and deep red. In a day or two the eyeball will appear protruded, not always directly forward, but its

upward or downward direction will afford an indication of the position of the abscess.

Cellulitis in the advanced stages may be mistaken for panophthalmitis, but the protrusion of the eyeball will at once indicate the orbital infiltration. It may also be confounded with periostitis of the orbit, but this condition can readily be diagnosed by pressure. If pressure on the eyeball itself produce severe deep-seated pain there is no doubt of cellular inflammation; if not, and if pressure on the margin of the orbit indicates tenderness, the periosteal inflammation will be recognised.

The diagnosis of an abscess in the early stage before marked displacement of the globe takes place, or in case the purulent deposit be situated directly in the axis of the orbit, is by no means easy. The chemosis and lividity of the lids and conjunctiva and the violent paroxysmal pain are likely to confound the disease with one of violent ophthalmitis. If the case be one of abscess the conjunctiva is rather œdematous than vascular, and the symptoms of corneal and iritic inflammation, which are always present when deep-seated inflammation of the eyeball exists, will not be developed.

At first the protrusion of the globe may be insignificant, and unless by careful comparison side by side with the other eye, may be overlooked, but afterwards it becomes marked and sometimes goes to the extent of dislocating the eyeball. If the protrusion be to one side the position of the cellulitis or of the consequent abscess will be indicated, but if the direction of the eye be forward the pus is probably deep behind the eyeball. Concurrently with this protrusion the sight is impaired by the tension of the optic nerve, till at last it is, for the time being, totally lost.

The pain of a simple orbital abscess is usually dull and deep seated, and only becomes violent when the extrusion of the eye is extreme.

Treatment.—In a few cases, especially of the more chronic form of abscess, absorption of pus and resolution may take place, but in the great majority of instances the abscess will point, usually forcing the conjunctiva of the palpebral sinus out before it before discharging itself. If the case appear likely to take this course it will be well to encourage it by poultices and mild saline cathartics.

If the patient has suffered violence the possibility of impaction of a perforating body must be remembered, even if the external injury be apparently very slight, and search should be made for an external opening, be it ever so small.

If the abscess be caused by the entry of a foreign body there is a direct exit for the purulent matter, and, the source of irritation being removed, it will end in resolution, like an abscess elsewhere.

But it may come spontaneously, or from a blow followed by extravasation of blood, but without puncture; and in this case, of course, considering the danger of its pressing backwards towards the brain, or causing necrosis of the orbit, an incision for its exit should be made at an early stage, exploration having been previously made, if there be any doubt of the existence of pus, with the grooved needle.

This course becomes necessary, also, when the eye is in serious danger, either from the pressure or from being extruded outside the natural covering of the lids.

If the pus should not be evacuated it will probably find its way slowly, and with great suffering, and present forward at the base of the chemosed lid, or perhaps under the conjunctiva. When the pus is discharged the eyeball partly resumes its natural position, but frequently the puckering of the muscles in the orbital cicatrix produces a partial strabismus.

As soon as, by careful examination, fluctuation can be detected, or before it, if the protrusion be great or cerebral symptoms threaten, an incision should be made. In acute abscess this must generally be effected through the lid, but if the swelling be inconsiderable the palpebral sinus is, of course, a more desirable locality.

A previous exploration with the grooved needle should be made in any doubtful case, in order that the depth to which it may be necessary to go with an incision and the exact situation of the abscess may be determined before large openings in so delicate a situation are ventured on. If the pus be located deep behind the globe the lower palpebral sinus will be the proper place for an incision, as it is easier to reach and allows the lowest channel for the exit of the pus. The threatening of cerebral symptoms or of destruction of the eye will be the signal for immediate evacuation of the pus, and the general instruction will be to allow its escape at as early a period as possible. If the wound be external a large soft poultice should be applied, and the wound kept from healing by the occasional use of a probe. If necrosis be suspected search should be made for a denuded sequestrum, and it should be removed by a long forceps, such as that employed for removing foreign bodies from the ear. If the suppuration be profuse or continued, support for the system will be demanded, and must be maintained by means of beef-tea and wine, while the constitutional irritation must be kept down by cooling drinks, saline purgatives, and perfect rest. If the cellulitis be developed, and before the deposit of pus, a few leeches to the temple or (if erysipelas be feared) to the mastoid process, will be useful in alleviating pain, and occasionally in averting suppuration.

Art. 162.—*On Wounds of the Eye.**

By Henry Power, M.B., F.R.C.S., Ophthalmic Surgeon to St. George's Hospital.

(*British Medical Journal*, November 16.)

The author referred to the necessity of making an accurate diagnosis in every case. The symptoms and treatment of the following were considered *seriatim:* 1. Foreign bodies irritating the palpebræ and conjunctiva, or becoming imbedded in the cornea. 2. Punctured wounds caused by a cutting instrument, involving the middle or margin of the cornea, or the sclerotic, or lens. 3. Severe blows which do not rupture the globe. 4. Rupture of the sclerotic. 5. Burns caused by fire inducing symblepharon; or by lime, chiefly affecting the cornea. In the treatment Mr.

* Read at a Meeting of the International Ophthalmological Congress, August 1st.

Power advocated the general principles of surgery, insisting on the value of rest. In rupture of the sclerotic, where vision is entirely abolished, he preferred extirpation of the globe to abscission. The President inquired how strychnia acted in amaurosis, and how sympathetic ophthalmia was set up. Mr. Power valued strychnia as a nervine tonic; he explained how sympathetic ophthalmia arose. The question between extirpation and abscission depended upon the state of the deep-seated structures; extensive deep injury necessitating the former, minor anterior injuries the latter operation.

Art. 163.—*A Chip of Iron lodged in the Eye—Extraction of the Lens with the foreign body imbedded in it—Recovery.*

Under the care of Mr. George Lawson, at the Royal London Ophthalmic Hospital, Moorfields.

(*Medical Times and Gazette*, November 23.)

A boiler-maker applied to the Royal London Ophthalmic Hospital on the morning of September 8, stating that on the previous day, whilst cutting a piece of iron with a hammer and chisel, a minute fragment of the chisel flew off and struck the left eye. He was unable to say whether it had penetrated the globe; all that he could tell was that the piece of iron was very small. Since the accident the man had been in constant pain and the eye was red and irritable. On close examination a minute mark was visible on the cornea, showing where the foreign body had struck; and on dilating the pupil with atropine the lens was seen to be growing rapidly cataractous, and a small rent could be detected in the lens capsule.

It was thus evident that the chip of iron must have penetrated the globe, for it was too small to inflict such a blow on the eye as would cause, from contusion only, a rupture of the lens capsule and cataract. The important question now to decide was, What was the best mode of treatment to be adopted? The sight of the eye, considering the diffused opacity of the lens, was good, the pupil acted well, and the field of vision was complete. It was very desirable to save the eye if possible; but at the same time it would be better to sacrifice the damaged eye rather than run the risk of losing the sound one from sympathetic ophthalmia, a result which might be predicted almost with certainty if the foreign body were allowed to remain in the globe. The man at the time was not prepared to come into the Hospital, but he agreed to do so on the following Friday (September 10), when he was accordingly admitted. The eye was then less irritable than when first seen, but the lens was more opaque.

Before operating Mr. Lawson remarked that it was quite possible, and, from the small amount of irritation present, it was probable, that the foreign body was imbedded in the lens. He proposed, therefore, to extract the lens by a free corneal section, and if he failed to remove at the same time the chip of iron, he would conclude that it was lodged in some deeper part of the eye, and at once excise the globe. For-

tunately for the man, the result proved that the foreign body was imbedded in the lens, for on completing the corneal section—the lens capsule having been already ruptured by the accident—the lenticular matter immediately began to escape through the wound, and the chip of iron was seen in the anterior chamber surrounded by soft lens substance. A pair of fine forceps was then introduced through the section, and the foreign body drawn out. The rest of the lens was then gently pressed through the corneal wound, and the operation thus satisfactorily concluded. After the operation the patient did well, and left the Hospital on September 20 with the prospect of a good and useful eye.

Art. 164.—*Diseases of the Ear.*

By Professor Seely, of Cincinnati.

(*Medical Press and Circular*, October 2.)

Professor Seely says, in the *Clinic*, that in the treatment of otorrhœa, both in children and grown persons, the chief desideratum is the thorough cleansing of the ear. He agrees with all men of experience that syringing is by no means always sufficient; in fact, many times it seems to be *absolutely injurious*. The secretion can be blown out by inflation, either by the catheter or by Politzer's method, or washed through the Eustachian tube into the throat by filling the ear with water and making pressure on the tragus, or washed the other way by passing the water through the meatus, inflating at the same time that the patient swallows, while the head is inclined at the same time far to the diseased side. The use of the probe and cotton will be found of great service also, especially when the parts need to be dry for the application of remedies, as in polypus and polyposed conditions of the membrana tympani. The Professor adds:—

"While all the astringents are used for otorrhœa I would especially recommend zinc, both the sulphate and acetate, and nitrate of silver. My advice is always to begin with a weak solution ($\frac{1}{2}$ to 3 grs. ad $\mathfrak{f}\mathfrak{z}$j, twice or three times daily), not only because it is often sufficient, but because a stronger solution may cause pain and thus terrify the patient and prevent further applications, and also actually do harm instead of good, if not preceded by a weak solution to accustom the parts to the contact. I need not say that frequently it will be necessary to change from one astringent to another.

"We have in otorrhœa a larger or smaller perforation of the membrana tympani, the purulent fluid coming from the middle ear. Certainly neither parent nor doctor in his right mind would allow such a stinking discharge to run on from any other part of the body, and in a purely sanitary point of view its neglect is beyond comprehension.

"Again, how can it be expected that the ear will become sound until the perforation or perforations (as they may be multiple) have healed? And, of course, the longer the discharge continues the more difficult is it for this to occur. Every one should then put before him, as the goal to

be reached in the treatment of otorrhœas in children, *the healing of the perforations.*

"So great importance is attached to the soundness of the drum-head that both many patients and not a few physicians are unwilling to admit that there is a perforation.

"Again, in cases of very great deafness with discharge, the reigning idea seems to be that the membrana tympani is *totally destroyed.*

"While the membrana tympani is of very great value in an acoustic point of view, it also plays an all-important *rôle* in protecting parts of still more value, the soundness of the two fenestral membranes being of still greater importance. Bear these points in mind, and all the mystery of hearing with a perforated membrane, of very bad hearing with a very extensive loss of the membrane, capable of being made very good, will be solved.

"If a perforation remains unhealed, the ear is left in an *unhealthy* condition, and you can never tell when the disease may reappear. Then remember the membrana tympani in its tutaminal function, its *protecting rôle*, and endeavour to make it perfect."

In juxtaposition with these views it may be well to give those expressed lately by Dr. B. St. John Roosa in a lecture on circumscribed inflammation of the auditory canal, published in the *New York Medical Record.* He says:—

"Circumscribed or furuncular inflammation of the external auditory canal is quite a common affection, and I imagine there are many more cases of this affection than is shown by the statistics of the writers on otology, inasmuch as it is not a serious affection in its consequences, and very often gets very little treatment. The subjective symptoms of a furuncular inflammation of the external auditory canal are pain and a sense of fulness in the ear. There is scarcely ever any *tinnitus aurium*, for the reason that the circumscribed swelling makes no pressure upon the membrana tympani and ossicula auditus, which pressure is usually the cause of the sounds in the ear described under the term of tinnitus aurium. On examination we find roundish isolated swellings that are very tender and sensitive to any contact. Even the touch of a delicate probe will sometimes cause patients to make an exclamation of pain. These swellings are not usually very red; for the integument is quite thick in the outer portions of the canal, and this is the usual site of the affection. We often find two points of pain and swelling in the same ear, and they are very apt to occur in succession, so that we are by no means sure of being done with a case because one furuncle is cured. The swellings that occur in the lower portion of the canal, the bony portion, which is two-thirds of the whole length, are not usually circumscribed, but diffuse, and are therefore to be classified under that head. They are more painful than furuncles, from the fact that the integument is thinner and closely adherent to the periosteum, so that such an inflammation is analogous, in the fearful pain which it occasions, to a paronychia, and requires the same treatment—that is, a free incision through the tense and swelled structure down to the bone. I should also say that the pain experienced in swallowing, chewing, and the like motions, from the pressure of the upper jaw, through the glenoid fossa, upon the swelled auditory canal, is one of the symptoms of which

patients with either the diffuse or circumscribed forms of external otitis complain very much.

"The causes of furuncular inflammation of the outer ear are not very plain. Like furuncles in the other parts of the body they are often an evidence of a deteriorated condition of the general system; but again, they occur where the subjects are in good general health. In such cases some local irritation by mechanical or chemical means, such as have been mentioned in the discussion of diffuse inflammation, is probably the cause.

"The general treatment will be determined by the condition of the patient. The local is simple; a deep incision should be made into the swelling, if any one very tender point can be found. It is a matter of indifference as to whether suppuration has or has not occurred in deciding as to the expediency of an incision. It should be made as soon as the case is made out. Leeches do very little good in furuncular inflammation. After the incision the ear should be douched every fifteen minutes or half an hour, by means of Clarke's ear douche, until the pain is relieved, when it may be used at intervals. The ear should also be cleansed by means of a syringe and the cotton-holder of which we make so much use in aural therapeutics.

"The thorough cleansing will usually relieve the impairment of hearing caused by the swelling and closure of the canal, while the incision and douche will cut short the pain. Each new furuncle is, of course, to be healed in the same way."

Art. 165.—*On the Removal of Foreign Bodies from the External Ear-passages.*

By Dr. Jos. Gruber, of Vienna.

(*Allgemeine Wiener Medicinische Zeitung*, 42 and 43, 1872.)

"As aural surgeons owe more to exact investigation than to empiricism, they have been convinced that the removal of foreign bodies from the external ear-passages is almost always to be aimed at through simple syringing of the outer meatus, and that only in very rare cases ought recourse to be had to special apparatuses or instruments for this purpose.

"The outer ear-passage is so formed that when foreign materials are introduced therein after the usual manner—generally, as is well known, in play with children, and with medicinal and other purposes with adults—they do not penetrate very deeply, and lie so loosely in the canal that they may be forced out simply by the action of a stream of water.

"The lumen of the external meatus is most narrow at the part where the cartilaginous portion is fixed to the long portion. In consequence of this constriction the introduction of large bodies into the deeper segment of the canal is attended with difficulty; besides this, the axis of the external meatus undergoes an angular deviation in which the apex of the angle corresponds to the above-mentioned constricted part. In these and other minor peculiarities due to the anatomical conformation of the organ is to be sought the reason why large foreign

bodies rarely pass beyond the cartilaginous portion into the deeper segment of the auditory canal, and therefore can, in the majority of cases, be quite readily removed.

"Although syringing was recommended by old authors as a very good proceeding for the removal of foreign bodies, and in more recent times it has been loudly and repeatedly urged in all works on otiatrics that the removal of foreign bodies should be attempted through properly executed injections, and *not through extraction proceedings*, yet every year do we light upon a really terrible number of cases in which not only were fruitless attempts made at removal of the foreign body, but in which, with the greatest harm to the patients, surgeons attempted to remove these bodies by means of various instruments. With this object hair-pins, forceps, and even scissors have been used in a most barbarous manner; and though in the most favourable cases—namely, those in which the surgeon succeeded in removing the foreign body—this result might have been attained in at least a much more simple and elegant manner, yet, alas! must it happen in other cases—and these, as has been stated, are always terribly numerous—that the patient pays for the excessive zeal of the operator in unnecessary suffering, and not unfrequently in some life-threatening malady.

"It is a known fact that the removal of foreign bodies from the meatus is generally the more difficult the greater the number of attempts that have been previously made; for with every fresh attempt at extraction is the foreign body—especially with children, who mostly are very unruly—pushed in much more deeply, the parts are more and more irritated and injured, the walls of the canal swell and are inflamed, and the canal itself becomes constricted. The more advanced are these bad results the more difficult does the removal of the foreign bodies become. The patient can bring no more acceptable intelligence to the experienced aurist than the assertion that he has not hitherto submitted to any attempts for the extraction of a foreign body from the ear; whilst, on the other hand, the complacent statement that everything possible has been tried, will indeed sound very unpleasantly.

"Even in cases where failure had attended attempts at extraction, many of which had been made on patients under the influence of chloroform, have I and others, by simple syringing of the external meatus succeeded in removing the foreign body. In this, as in all other manipulations of a like kind the most experienced hand and the most intimate knowledge will obtain the best results. Syringing of the meatus, when done well and with a view to results, is by no means so simple and easy a proceeding as is generally supposed, and considerate operators will agree with me when I assert that this manipulation in order to be properly performed requires as much practice as catheterism of the Eustachian canal; and that for the attaining of the object in view by means of syringing the surgeon will be required who is most intimate with the anatomical conditions of the ear, and who is able to make practical use of this knowledge.

"I consider in general the advantage attending the method of removing the foreign body from the meatus by injections over the removal by extraction instruments of any kind to be so great that, relying on

conclusive observations, I have for some years past—even in cases where on the first examination the state of the meatus, either in consequence of previous attempts at extraction, as is most usually the case, of the manner in which the body was introduced, or of resulting inflammation, is found to be quite unfavourable for such a proceeding; and when besides the foreign body is not likely, in consequence of its physical or especially of its chemical properties, to act injuriously on the parts, and the inflammation set up by its presence is not such as to indicate its immediate removal—advised that this foreign body should be left in the ear until the concomitant inflammatory symptoms have ceased, and then, when the external ear has been brought to a better condition, that an attempt should be made to remove the body by simple syringing.

"Into the right meatus of a boy eleven years of age, and who had previously had 'a discharge from the ear,' his school companions thrust a carraway-seed, and afterwards pushed it further in with a lead pencil. Soon afterwards this ear became painful, and the patient applied to a medical man, who, after some fruitless attempts at extraction, prescribed a sedative lotion for application to the parts around the ear. Five weeks later the boy came under my care. He was then much reduced and feverish. The walls of the right meatus were wonderfully swollen and inflamed, and the lumen of the passage was much contracted and filled with exudation, after the removal of which a dark-brown body could be seen far down, surrounded by the swollen soft parts of the meatus. This body lay very deeply, either on the membrana tympani, if such a structure still existed, or probably with its inner end thrust beyond this part, and one could readily make out that this was the imported carraway-seed.

"Syringing of the meatus for the purpose of removing this body must, under the above described conditions, have been quite ineffectual; so, in the first place, I restricted myself, according to the theory developed above, to the removal of the inflammatory phenomena, so that when once the swelling of the walls of the meatus had disappeared and the canal itself had become wider, an attempt might be made to withdraw the body by means of injections. With these objects in view I prescribed a solution containing acetate of lead and of morphia (one grain of each to one ounce of water), and ordered cold applications behind the ear and cleansing of the meatus by injections of clean lukewarm water to be made once every day. During each injection some of the water flowed from the nose, a proof that the membrana tympani was at least perforated.

"After the inflammatory symptoms had yielded the foreign body could be more distinctly perceived; but, as its removal by syringing the meatus was not possible, suitably cut pieces of compressed sponge were introduced in order to dilate the contracted auditory passage, and, in order to induce shrinking of the foreign body, a solution of sulphate of zinc (5 grains to an ounce of water) was dropped in. At last, after the foreign body had been in the meatus for three months, it was removed during simple syringing with the return current of water. Suppuration had quite ceased about six weeks before, although the foreign body was still present in the ear. After the removal of the seed it was found that the membrana tympani had undergone cicatricial degeneration, but

that there was no perforation. This latter lesion had healed with the foreign body present in the ear.

"In order to find, in those cases where the foreign body cannot be easily removed from the meatus by syringing, expedients which may render possible the attaining of this object, it is imperatively necessary that the mode of action of this operation should be described. The injected water will not remove the foreign body unless it penetrates deeply into the passage between the body and the walls of the meatus. The body is then acted upon by a force working from within, and is thus driven to the external orifice of the meatus. When the fluid does not come upon the foreign body from within it cannot force it outwards, and it may readily happen, when there is no deep-seated obstruction to prevent it, that the body may, by the stream of injected water, be forced still further along the canal.

"It happens, indeed, in several cases that the injected water forces the foreign body into a position which is more suitable for its removal, so that the water passes beyond the inner end of the body, and from thence acts upon it in a backward direction. In all such cases the foreign body is not firmly wedged in, and the surgeon may attain his object through syringing.

"The case is different when the foreign body is fixed at any part of the meatus and the injected water has no power to place it in a more suitable position. In such cases, provided the most copious anatomical knowledge has been brought to bear on the attempt by syringing, the surgeon should endeavour to render removal possible by other means before having recourse to extraction instruments.

"If one considers that in difficult cases of this kind every attempt at extraction results in more or less injury to the parts of the meatus, and frequently in inflammation and its consequences, he will regard extraction as a last resource, and as an acquisition to practical resources that has not been too much underrated.

"Professor Voltolini recommends partial destruction of the foreign body, when this is combustible, by galvano-caustic. The remains can then be readily removed. There can be no doubt and the cases reported by Professor Voltolini give sufficient proof of this, that in many cases this method may be practised with advantage.

"It should of course be applied only in suitable cases, and the surgeon should make it his aim to burn the foreign body from its centre, so that the parietal structures of the meatus may remain free from any injury. When I speak of suitable cases I mean those in which the foreign bodies are known to be bad conductors of heat, otherwise the heat might be transmitted to the soft structures of the meatus and cause harm. The surgeon in cases of foreign bodies in the meatus has generally to deal with bad conductors of heat, as carraway-seeds, beans, peas, fruit-kernels &c. which may be partially burnt without transmitting heat to the walls of the meatus.

"The proceeding devised by Lowenberg consists in applying to the foreign body in the meatus another long body from without, the end of which is tipped with some good adhesive mass (glue). The two bodies are thus joined together, and that previously passed into the meatus may be extracted. Lowenberg asserts that he has succeeded in re-

moving in this way a foreign body from the meatus; the possibility of this is not to be doubted, and there are a certain number of cases in which this proceeding may be applied with advantage. It seems to me to be especially adapted for those cases where the foreign body has not been fixed too deeply in the meatus.

"As I have already stated, my usual practice is not to attempt to remove at once any foreign body the presence of which is not particularly prejudicial to the meatus, when this body cannot be withdrawn by syringing, but rather to wait until such time as its removal can be easily effected. In the meantime I endeavour by treatment to repress any bad results, to moderate any morbid phenomena that may be present, and also by acting on the body itself, if such action be in any way possible, in order so to modify its physical characters that its removal may be rendered more easy.

"Thus I am in the habit of acting on all leguminous foreign bodies forced into the meatus, by applying to them fluids that may produce a shrinking of such bodies. When the body shrinks, a free space is then established between it and the walls of the meatus, which, however small it may be, is still sufficient to enable me to place the body in a more suitable position by means of the injected stream of water, or to act upon it with the vis à tergo of the recurrent stream.

"Since, as has been stated above, the foreign bodies which most frequently require to be removed from the meatus are legumes, I have taken the trouble to study the action of various astringent fluids on different kinds of pulse. It is self-evident that in these investigations only such fluids should be used as can be introduced into the meatus without doing much harm. I tried solutions of alum (five grains to an ounce), of sulphate of copper (one grain to an ounce), tannin (five grains to an ounce), and liquor calcis. In these solutions leguminous seeds were placed, and allowed to remain for eight days.

"It was found that in lime-water and the solution of zinc alone did these bodies become smaller; with the other solutions there was no reduction in their volume.

"In cases where it is necessary to produce shrinking in foreign bodies of this kind, the most suitable agents for this purpose, so far as we at present know, are a weak solution of zinc, or lime-water, which should be dropped into the meatus several times during the day, so as to act upon the foreign body and facilitate its removal at a subsequent period.

"I would take this opportunity for pointing out that syringing the ear-passages of children under the age of twelve months is most properly carried out by drawing the pinna laterally and downwards, and not, as with adults, laterally and upwards. When in syringing the ears of suckling children, the surgeon does not draw the pinna upwards, he produces a condition quite opposite to the one desired. Instead of dilatation of the meatus, which can be readily produced in delicate children by drawing the pinna upwards, the canal is rendered narrower.

"In such individuals the passage may be most readily dilated, if the pinna be taken at its lower third, and then be gently drawn laterally and outwards."

Art. 166.—*Non-Purulent Catarrh of the Middle Ear.*

By W. B. Dalby, F.R.C.S., M.B. Cantab., Aural Surgeon to St. George's Hospital.

(*Medical Times and Gazette*, October 19.)

At a meeting of the Royal Medical and Chirurgical Society, on Oct. 8, Mr. W. B. Dalby read a paper on "Non-purulent Catarrh of the Middle Ear." He commenced by stating that the object of the communication was to direct attention—firstly, to the several conditions under which the Eustachian tubes become so obstructed as to prevent the free passage of air from the pharynx into the tympana; secondly, the various effects which follow catarrh of the tympana; and thirdly, the treatment adopted for these affections of the ear. The notes of cases treated at St. George's Hospital and elsewhere, extending over a period of three years, formed the basis of the paper, and there was an appendix containing an abstract of twenty cases which were considered typical of the disease under notice. When the Eustachian tube only was involved, the appearances of the tympanic membrane most frequently noticed were—an increased inward curvature, unusual prominence of the short process of the malleus, and a tilting inwards of the handle of this bone. The chief element in treatment was regular inflation of the tympanum, on Politzer's method, until the catarrhal condition had subsided, when the hearing was completely restored. In the next class of cases—viz., when the mucous membrane lining the tympanum was the seat of catarrh—the changes noticed on examination of the tympanic membrane were alterations in curvature, opacities, thinning of the membrane generally as well as in circumscribed spots, and calcareous degeneration. The author considered that these should be regarded merely as the effects of catarrh, and not, as in the classification adopted by Mr. Toynbee, separate diseases. Such changes were not of themselves the cause of deafness; the origin of this will be found to be behind the membrane, in the form of accumulations of mucus, and it is to the softening and removal of these that the treatment must be directed. With this view the injection of alkaline solutions into the tympanum was practised, either by means of the Eustachian catheter, or forced into the cavity of the tympanum with the aid of a Politzer's bag, while the patient performed the act of swallowing—some of the fluid thus used having previously been injected from a glass syringe into the inferior nares of the side to be acted upon. In a large proportion of the cases very considerable improvement in hearing followed; but the author stated that in many there were no appreciable results, for as it was impossible to judge of the precise changes that had taken place behind the tympanic membrane from its appearances, it was difficult to predict what might be the effect of treatment. In some instances an incision was made into the membrane, and the mucus evacuated through the cut by passing a stream of air through the Eustachian tube. Very good results followed this proceeding, but it was only done where more simple means had failed, and there was ample evidence of the mucus being in a fluid state.

Art. 167.—*On the Treatment of the Diffused Form of Inflammation of the External Auditory Meatus.*

By W. B. Dalby, F.R.C.S., M.B. Cantab.

(*The Lancet*, August 24.)

The diffused form of inflammation of the external auditory meatus, Mr. Dalby writes, differs from the circumscribed, inasmuch as it does not terminate in abscess, and, as its name implies, in being diffused throughout the integument of the canal. Since the outer cuticular layer of the tympanic membrane is continuous with that lining the meatus, there is always a certain amount of risk lest this membrane become implicated, and for this reason this affection is more serious than the one considered in the preceding article. It is not strictly correct to describe it as being of two kinds—viz., acute and chronic—because, although the attacks are acute at one time and chronic at another, their gradations so insensibly pass into one another that an artificial division is practically useless. Children are especially liable to it; and as it is generally neglected among the poorer classes, with them it is not unfrequently the origin of a perforation of the tympanitic membrane. It often succeeds the exanthemata, although not nearly so commonly as purulent catarrh of the middle ear spreading along the mucous membrane from the throat. The diffused form of inflammation of the external meatus commences with a feeling of uneasiness and itching, just within the orifice, which very soon becomes red, tender, and swollen; and there is pain during mastication. These symptoms increase in severity, until, with the appearance of a discharge, the pain ceases, and the swelling gradually subsides.

Such is briefly an account of its acute stage, which usually occupies a week or ten days. The treatment is palliative—viz., leeches and fomentations; but as this affection does not occur to persons in a good state of health, the diet should be attended to, and a change of air, if possible, be resorted to, for it is most desirable not to let this condition become a chronic one, as it is most apt to do.

Art. 168.—*On the Treatment of Abscesses in the External Auditory Meatus.*

By W. B. Dalby, F.R.C.S., M.B. Cantab., Aural Surgeon to St. George's Hospital.

(*The Lancet*, August 24.)

In his lectures on diseases and injuries of the ear, Mr. Dalby states that one of the most troublesome affections of the external auditory meatus is the formation of small abscesses, which may occur at any situation in this canal. They do not seem to be confined to persons of any particular age or constitution. The first symptom is pain in the ear, which in a few hours becomes so acute as to put sleep out of the question. After twenty-four hours or so, the meatus in its entire extent will be swollen

sometimes the whole external ear will be enlarged, red, and tender to the touch. The movements of the jaw occasion great pain. There is more or less deafness, in proportion to swelling. If the patient be seen within a day or two of the commencement of the attack, the greatest benefit may be afforded by two or three leeches placed in front of the tragus, just over the articulation of the lower jaw, and followed by fomentations: in this way the affection may be cut short occasionally. When the leeches are applied, the meatus should be filled with cotton wool, to prevent the blood getting in. If not checked in the early stage, the state of things described will increase in severity for several days, and, on examining with a probe, one point will be felt to be far more acutely tender than any other part of the meatus. The whole meatus is so swollen that it is not possible to see the position of the abscess with a speculum. This point having been distinctly localized, the sooner an incision is made into it the better, as by this the tension of the parts, to which the agonizing pain is due, is relieved. The best knife to use is a curved, sharp-pointed bistoury, and a free incision should be made as it is withdrawn. After this the patient gets well in a few days. Very frequently, however, he is no sooner well of one abscess than another commences to form, and all the suffering has to be endured again. It is this recurrence that makes the affection such a troublesome one. Sometimes six or seven abscesses will occur successively in the same patient, obliging him to remain in the house for as many weeks, and causing an amount of suffering altogether disproportionate to the gravity of the illness. In recognising this occasional peculiarity in these cases, caution will be observed in promising a patient that he or she will be well within a certain time.

Art. 169.—*Foreign Bodies in the Meatus.*

By W. B. Dalby, F.R.C.S., M.B. Cantab., Aural Surgeon to St. George's Hospital.

(*The Lancet*, August 24.)

With regard to the removal of foreign bodies in the meatus, Mr. Dalby remarks, two points should be borne in mind. In the first place, that as the meatus is lined by skin continuous with that of the auricle, provided the edges of the object are not sharp, they may remain there for an indefinite period and do no harm. In the second place, that very considerable injury is often done by injudicious efforts which are made to extract them. It is not, however, to be understood from this that no attempts should be made to remove them. But no instrument should be used, excepting when, with the mirror on his forehead, light is reflected down the meatus, and the operator, with both hands free, can see what he is doing. The first thing to be done in any case is to syringe the ear; and in doing this the nozzle of the syringe, which should be fine and probe-pointed, is to be kept at the upper part of the meatus, so that the returning stream of water may bring it away. This not happening, if it is near the external orifice, or at any rate not more than halfway down the meatus, and especially if it be of a soft nature or of an uneven shape, it may

often be laid hold of by a pair of ring polypus forceps. A loop of silver wire may sometimes be passed beyond it, and by pulling at this it may be moved outwards; or the noose of a Wilde's snare may be used in the same way, and the body sometimes by this means be secured and extracted. Young children must have chloroform, not because they are being hurt, but because they will not keep quiet; and without this it is impossible to do any good. Adults will sit still in a chair, as they are not put to any pain. If the foreign body cannot be removed in one of these ways, or if it have passed more than halfway down, any further attempts will assuredly only have the effect of sending it further in, and will frequently result in a rupture of the tympanic membrane. The ear should be occasionally syringed, and the foreign body will gradually approach nearer and nearer the orifice, until it finally drops out. It may be weeks, or even months, before this happens, but if it be left alone, it will do no harm. If the tympanic membrane be unfortunately ruptured, this is generally followed by suppuration in the cavity of the tympanum, a discharge from the ear lasting a long time, and more or less permanent deafness. After such an accident, if there be much swelling of the meatus and pain, a few leeches in front of the tragus, followed by fomentations, will be advisable. Anything more energetic than the treatment suggested in the case of foreign bodies in the meatus is thought more likely to prove harmful than beneficial, notwithstanding the numerous instruments that have been brought forward, it is said, with the object of getting behind the body and removing it.

ART. 170.—*Polypus of the Ear and Perforation of the Membrana Tympani, and the Instruments used in the Diagnosis and Treatment of Diseases of the Ear and Throat at the Ear and Throat Infirmary, Birmingham.**

By CHARLES WARDEN, M.D.

(*British Medical Journal*, August 24.)

Dr. Warden, in describing the different varieties of polypus, exhibited a modification of Toynbee's ring-forceps for their extraction, designed by himself. In enumerating the various causes of laceration of the membrana tympani, he gave a description of an artificial drum for the treatment of perforation, whereby the hearing power was greatly increased in many instances of almost total deafness, enabling the sufferer to hear ordinary conversation at moderate distances. The little apparatus consisted of a hollow cone of india-rubber cut into the shape of a well-known flower (the *Cyclamen Hederæfolium*), one of the Primulaceæ, from which Dr. Warden took the idea. It was made of various sizes, to fit the meatus auditorius of old and young. It had no sharp border to injure or irritate the mucous membrane on the sides of the ear-passage; and the base of the cone was slit up towards the apex at intervals of about the thirty-second or sixty-fourth part of an inch from the apex. Each flap or division acted as a valve, and thereby exactly adapted itself to the interior of the meatus, and rendered the tympanum a perfectly

* Read before the British Medical Association.

closed cavity from without, at the same time restoring the structures concerned in the sense of hearing as nearly as practicable to their original condition.

Art. 171.—*The Labyrinth of the Ear.*

By H. Knapp, M.D.

(*The New York Medical Record,* June 1.)

At a meeting of the Medical Society of the county of New York, Dr. Knapp delivered a very interesting lecture upon "The Labyrinth of the Ear, its Structure, Functions, and Diseases." After a brief explanation of the nature of sound, as produced by the vibration of ponderable bodies; of the distinction between *noises*, produced by irregular vibrations, and *musical tones*, produced by rhythmically recurring ones; and of the three elements of *pitch*, *intensity*, and *quality* (*timbre*), which characterize every tone—the first due to the frequency with which the sound-waves fall upon the ear; the second, to the excursion of the vibrating particles; and the last, to the combination of the higher harmonics, or "over-tones," with the fundamental note, as demonstrated by Helmholtz—the speaker came to the description of the auditory organ as an apparatus adapted to the perception of sound, and to the discrimination of its several characteristics. Modern research had been so active in this field, that the mechanical explanation of audition, only a few years since one of the most difficult and obscure of physiological problems, might now be considered among the clearest and best settled.

Assuming the familiarity of his audience with the anatomy of the external and middle ear, and of the osseous framework of the internal, the Doctor confined himself to a minute account of the membranous labyrinth, referring particularly to the late observations of Waldeyer and Gottstein, some of which he had himself confirmed. As we can mention only a few points of his crowded discourse, we must further assume that our readers know so much of the membranous labyrinth as may be learned from recent anatomical text-books, such, for example, as the last English edition of Quain.

The mode of connexion between the utricle (common sinus) and the saccule, has long been a matter of doubt. Of late, however, what seems to have been an old discovery has been made anew, and it is demonstrated that from either sac there proceeds a slender duct, the two uniting in a single one (after the manner of the cystic and hepatic, in the common choledoch) which passes through the aquæductus vestibuli, to open into the so-called arachnoid cavity. Thus the endolymph is in direct connexion with the fluid occupying the space between the arachnoid and the dura mater. Furthermore, the loose areolar tissue surrounding the filaments of the auditory nerve, as they pass through the cribriform plate at the bottom of the meatus internus, permits a tolerably free communication between the perilymph and the sub-arachnoid fluid. It is not surprising, therefore, that the auditory nerve, expanded on a membrane between the endolymph and the perilymph, should so speedily respond to changes of intracranial pressure.

The terminal filaments of the vestibular nerve, being connected with the otoliths of the sacs and the ampullæ—bodies apparently ill adapted to rhythmical vibration—would seem intended for the perception of noises. [This is what we should expect from finding the vestibule, with its suspended otolith, as the most rudimentary form of the ear, serving probably to warn the animal of approaching danger by the noise attending it. The intensity of the sound is no doubt rudely measured by the degree of commotion into which the otoliths are thrown, though in the higher animals this is more perfectly accomplished by the muscles of the tympanum. Is it not possible that the hair-like processes, extending beyond the ear-sand into the endolymph, may, by vibrating as free rods, also give some perception of pitch, though far less delicate and extended than that furnished by the cochlear apparatus ?]

Coming to the more complicated cochlea, it will be remembered that the membrana basilaris, which extends from the edge of the bony lamina spiralis to the cochlear wall, and upon which rests the organ of Corti, is divided into an inner *zona tecta vel arcuata*, covered by the arches formed by the rods of Corti, and an outer *zona pectinata*, characterized by its coarse transverse striæ. Now these striæ are found to be strings imbedded in the substance of the membrane, each being attached at its outer extremity to the spiral ligament, and at its inner to the foot of one of the club-shaped ciliated cells which, in a fourfold series, lean upon Corti's rods—the very cells to which have been traced the terminal filaments of the cochlear nerve. As the zona pectinata increases in breadth from base to apex of the cochlea, these strings are of regularly varying length; they appear also to be of different thickness; and if we suppose, with Todd and Bowman, that the ligamentum spirale is really muscular, it is conceivable that they may vary in tension, being *tuned* by this "cochlear muscle." The strings are doubtless isolated from each other by a non-elastic "cement," which allows each to vibrate without affecting its neighbours.

Consider that there are some three thousand of these strings, each connected with its own ciliated cell, and communicating its slightest tremor to its special nerve-filament, and we have a resonance-apparatus manifestly delicate enough to discriminate all the shades of tone the ear is able to appreciate. In obedience to the familiar law of resonance, a given note will determine a responsive vibration in that particular string of the whole three thousand which is tuned in unison with it, and so send notice of its exact pitch to the brain. A chord will throw into vibration several strings, each sending its separate message to its own brain-cell; and the combination of these independent sensations will give the sense of harmony. This, therefore, requires a kind of intellectual process for its appreciation. Quality, as we have seen, is but another name for harmony, and must be appreciated in the same way; the *timbre* of a tone being determined by the number and relative force of the several harmonics that compose it.

However perfectly an organ may appear adapted to a certain function, still any theory of its function based on structure must be considered merely speculative until verified by experiment. Now the inner ear is removed, not less by its delicacy than by its inaccessibleness, from the possibility of satisfactory direct experiment; but here, fortunately, we

may take advantage of pathological conditions—nature's experiments—which often guide us as surely as any we might contrive. Some of the following points have been established by post-mortem examinations, but the most of them still require this confirmation.

We may have a diminution of hearing-power for noises without a corresponding diminution of the power to distinguish musical tones, and *vice versâ*. The watch may be used to determine the one condition, a musical box to determine the other. It is probable that in the former case the vestibular and ampullar structures are chiefly affected; in the latter, the cochlear.

Again, as some persons are blind to certain colours, so others are deaf to certain notes. These defects in the range of audition are most frequently found in the higher notes, sometimes in the lower, and more rarely in the middle of the series. For the defect at either end of the series, the explanation at once suggests itself that either the higher or the lower strings are wanting, or that, as a whole, the apparatus is tuned to a lower or a higher piteh. For a defect in the middle notes, we must suppose either an arrest of development of the corresponding strings, or their subsequent morbid alteration or destruction. It is clear that a destruction of the nerve-filament connected with a string or of the brain-cell from which it takes origin, would produce the same effect.

Instead of deafness to certain notes, there may be a painful hyper-audition of them. This must probably be referred to a morbid sensibility of the nerve or its originating cell, unless we suppose the string in question to have one or more others tuned in unison with it, and with a like nervous connexion, or to have its vibrations reinforced by the resonance of some other structure.

Perhaps the most curious condition is that in which a certain note is heard not as a single one, but as a discord formed by the association of the note with others immediately above and below it. Here we may imagine that the "cement" between the proper respondent string and its neighbours has become hardened, destroying its isolation, so that it cannot vibrate without compelling them to do so. And, though the vibrations of all may possibly be synchronous, yet the brain will interpret the message from each string as indicating that note to which it was meant to respond. This affection may be termed *diplakousis monauralis*, to distinguish it from another, *diplakousis binauralis*, in which a given note is heard of differing piteh by the two ears.

There are some frightful cases where persons in apparently sound health become totally and hopelessly deaf in a few minutes. They are seized with apoplectic symptoms, in which giddiness and loss of equilibrium are especially prominent; the attack passes off speedily; but permanent deafness remains. This is due to hæmorrhage into the labyrinth, known as Menière's disease. The same effect may result from fracture through the bony labyrinth—a frequent situation of fracture by *contre-coup*, since the petrous bone is here weakened by its numerous chambers, while it lies in the line of transmission of force from the vertex to the base of the skull.

The loss of equilibrium, just mentioned as dependent on labyrinthic lesions, points to a function of the semicircular canals as yet imperfectly

understood. We only know that, in some unexplained way, these do seem to preside over equilibrium, and that an animal will turn or fall in one way or another according as one or another of them is injured.

Deafness may be produced by syphilitic inflammation of the labyrinth. Many of these cases present all the symptoms of Menière's disease; but if their syphilitic origin be established, the prognosis, instead of being hopeless, is quite favourable.

Purulent inflammation of the labyrinth is not infrequent, and it is especially apt to occur as secondary to cerebro-spinal meningitis.

Art. 172.—*Local Remedies for Throat-Deafness.*

(*British Medical Journal*, July 20.)

At a meeting of the East Surrey District of the South-Eastern Branch, Mr. Hodgson (Brighton) offered for notice a contrivance which he represented he had for some time been in the habit of making, and using to excellent purpose, as a mode of applying medicaments (especially glycerine of tannin, diluted with an equal quantity of spirit of wine, and weak solution of nitrate of silver) to the posterior nares, the upper part of the pharynx, and the Eustachian passages, in cases of throat-diseases.

The instrument consisted of nine inches of glass tube, of the size of a small quill, bent at an angle of about 95 degrees, one end drawn out nearly to a point, and carefully rounded, and the other end filled with a few inches of india-rubber tube, in the farther end of which was a bit of glass tube to act as a mouthpiece.

The bent portion of the glass tube having been charged by suction from a glass with the medicament (of which it will hold about twenty minims), the pointed end is to be carefully inserted for about an inch along the floor of the patient's nostril, and the mouthpiece in the operator's mouth.

The patient's nostrils are then to be grasped around the tube, and the patient directed to swallow, at which moment the operator is briskly to blow forwards the contents of the tube, and thereby scatter them into the upper part of the pharynx, &c.

Mr. Hodgson stated that almost any druggist could make the instrument, and any intelligent person (with one lesson from the surgeon) could learn to use it—a point of no little importance in such chronic cases as these are apt to be.

Art. 173.—*On Suppuration of the Antrum.*

By Christopher Heath, F.R.C.S., Surgeon to the University College Hospital.

(*Injuries and Diseases of the Jaws*, 2nd edition, pp. 416. London. 1872.)

"The treatment of suppuration of the antrum consists," Mr. Heath writes, "in the first place, in the extraction of all decayed teeth or stumps in the affected jaw, and with this object in view those teeth which are apparently sound should be tested by a sharp knock with

some metal instrument, when, if tender, they should be extracted. If the cause of the mischief is removed in time, the inflammation will subside under fomentation and the application of a leech to the gum; but if matter has formed, it must be evacuated without delay. If the extraction of a tooth is followed by the flow of pus, the enlargement of the aperture in the socket by the introduction of a trocar is at once the readiest and simplest mode of evacuating the matter; but if all the teeth are apparently sound, it will be advisable to extract the first molar in order to puncture through one of its outer sockets. The first molar is to be preferred for extraction, both on account of the depth of its socket, and also because, as mentioned by Salter, it is more liable to decay than the other teeth. In puncturing through the socket of a tooth with a trocar, it is well to gauge the depth to which the instrument may safely go with the fingers of the hand which grasps it, lest injury should be unwittingly inflicted on the orbital plate by the trocar entering unexpectedly. When the teeth are all sound, some surgeons prefer to perforate the alveolus above the gum with a trocar or strong pair of scissors, and similar treatment would be required in the rare case of suppuration occurring after loss of the teeth in old people. I find it convenient to employ the ordinary canula with the trocar, since by its means the flow of fluid can be more readily seen, and any injection of the cavity at the time easily performed.

"Whatever method may be adopted for emptying the antrum, it is important that the cavity should be thoroughly cleansed by the injection of warm water. For this purpose a curved canula, fitting the syringe ordinarily employed for injecting hydrocele, answers very well; or I have satisfactorily employed an ordinary Eustachian catheter for the purpose, to which an india-rubber injecting-bottle can be readily adapted. After thoroughly cleansing, some detergent and slightly astringent lotion should be injected, to restore the healthy condition of the mucous membrane, and for this purpose weak solutions of permanganate of potash or sulphate of zinc answer admirably. If the perforation has been made through the socket of a tooth, care must be taken that particles of food do not gain admission to the antrum, and this may be accomplished by plugging the hole with cotton wool, or, as suggested by Salter, by fitting a metal plate to the mouth with a small tube to fill the aperture, which can be corked at pleasure, and will serve as a pipe for injection. When the perforation is made above the alveolus there is much less likelihood of food finding an entrance."

Art. 174.—*Ulcer of Cornea and Dental Abscess.*

By C. E. Wright, M.D., of Indianopolis.

(*Ind. Journ. Med.*, July; and *New York Medical Record*, October 1.)

That a diseased tooth may be an immediate cause of a corneal ulcer, or an active agent in prolonging its cure, Dr. Wright would admit. He publishes the case of a lady, æt. forty, who had an indolent round ulcer on the corner of the right eye, and had been subject to violent paroxysms of toothache and neuralgic pains on right half of face and head for

months: after proper ophthalmological treatment she was advised to consult her dentist, Dr. P. G. C. Hunt, who extracted the first upper molar on right side, finding an abscess at the root. The same treatment of the eye was continued, and in about three days the eye was well.

Art. 175.—*Hygromatous Cyst of Von Ammon.*

By William R. McMahon, M.D.

(*Medical and Surgical Reporter*, July 27.)

Dr. McMahon mentions an unusual case of congenital cyst of the neck, filling the space between the upper part of the sternum and chin in a child four days old, which was cured by a seton composed of two strands of surgeon's silk saturated with tincture of iodine, and external pressure commensurate with the comfort of the child. The seton was not introduced until nearly three months after the birth of the child. The obliteration of the cyst was perfect, and the only mark left to designate the site of this formidable tumour, was simply a slight redundancy of tissue.

Art. 176.—*Fracture of the Base of the Skull; Paralysis of the External Rectus; Recovery. Treated in the Brooklyn City Hospital.*

Reported by J. H. Raymond, M.D., late House Surgeon.

(*New York Medical Journal*, May.)

J. L., aged forty years, a truck-driver by occupation, was admitted to the hospital Nov. 30th 1871. He was thrown from his truck and fell a distance of four feet, striking upon the left side of his head. On admission he appeared to be suffering from compression of the brain; there was bleeding from both ears and nose, and also a scalp wound over the left parietal region—which, however, gave no trouble, healing by first intention. The following morning he was conscious; his speech was indistinct; his left side was paralysed; the power of motion over the limbs being just appreciable, while the facial paralysis was complete. It was discovered for the first time that there was a discharge of a serous fluid from the left ear, which continued for several days; the left eye was turned in toward the nose, and could not be directed outward; the patient complained of "seeing double." He gradually regained the use of his limbs, and of the muscles of his face, though the improvement in the facial paralysis was less rapid. By Jan. 1st he was able to leave his bed, complaining only of severe headache on the left side at night, of deafness in the left ear, and double vision. His headaches disappeared after a few weeks, while his deafness remained up to the time of his discharge. With the return of the power of motion in limbs and face, no improvement in his external rectus took place. About this time attention was attracted to an article in the London

Practitioner, for the month of January, on the use of the Calabar-bean. On the 19th of Jan. a solution of the alcoholic extract was ordered, of one grain to the ounce of water; one or two drops were daily dropped into the eye, and at the expiration of a week the gain of power over the rectus was appreciable, both to patient and physician. The only other effect was to contract the pupil. At the time of the patient's discharge the improvement was very marked, he being able to carry the centre of the pupil three lines to the left of the median line. After the drops had been in use about one week, he discovered that, by closing the nose and mouth, and blowing, he could cause the air to pass out through the puncta of both eyes. He was discharged from the hospital Feb. 19th, 1872, able to resume his occupation. This open condition of the lachrymal canal did not appear till the Calabar-bean had been in use one week, and the question naturally was asked whether is was a result or a coincidence only. Forty-three persons were examined for the purpose of ascertaining the condition of the lachrymal canal when no Calabar-bean had been used, and it was found that of this number six could blow air through the puncta when the mouth and nose were closed, though but one seemed to have the passage as open as the patient.

(B) CONCERNING THE TRUNK.

Art. 177.—*On the Treatment of Bubo.*

By Dr. Emanuel Kohn, of Vienna.

(*Schmidt's Jahrbücher*, No. 8, 1872; *Wiener Medicinische Presse*, xiii. 25, 26, 27, 29, 1872.)

The author states that the arrangement of buboes into chronic, sub-acute, and acute, as adopted by Von Sigmund is from a practical standpoint the most convenient; with chronic buboes there is no pain; with sub-acute buboes there is pain only on firm handling; but with acute buboes, in addition to spontaneous pain and all the phenomena of inflammation, there are, more or less, considerable disturbances of the general health.

In cases of *chronic* bubo the use of warm applications should not be long continued, lest hyperæmia and inflammation of the skin be set up; the surgeon should aim at bringing about a change of material in the diseased organ by exciting a slight degree of inflammation. This object is best attained by the local application of tincture of iodine, either pure or mixed with tincture of galls, which must be applied several times daily until a thick covering has been formed which passes beyond the circumference of the original tumour and serves to compress the subjacent organ. By the simultaneous application of warm fomentations or mechanical pressure, also by the local use of astringents and resorbents, may the action of the iodine paint be increased. It ought, however, always to be borne in mind that the skin should not unnecessarily be much irritated.

A second kind of treatment consists in the administration of remedies for the constitutional affection and in the systematic use of simple baths, or of medicated baths and drinks. In a treatment with preparations of iodine the author recommends occasional interruptions, especially when

large doses are prescribed. Inunction of mercurial ointment should be restricted to the lower extremities. With all treatment of this kind absorption does not take place until after a long period, and even then is incomplete; the most that can be obtained is a considerable diminution in the size of the affected gland.

In the treatment of *sub-acute* buboes the first object of the surgeon is to reduce the intensity of the irritative process, as a new-cell-formation is the chief element in this form. The chief means for attaining this object are rest and cold. The patient must remain in bed with the extremities in such a position that the fasciæ may be relaxed and all pressure on the diseased gland be avoided. The tumour should be covered by an ice-bag or by cold compresses. The application of cold is contra-indicated only by the following conditions: diarrhœa, catarrh, rheumatism, rapidly appearing swelling of the tonsils and uvula, and chilliness or an attack of rigors, which can be attributed to no other cause. If the above mentioned method of treatment be applied in good time the progress of the inflammation may be averted, whenever at the commencement of the treatment the disease has not passed beyond the stage of irritation. Should a tumour appear in spite of this treatment, the surgeon should still continue this treatment; painful tumours, as large even as a pigeon's egg and covered by tightly distended skin, often disappear under the influence of cold applications. There is certainly a danger of relapse, but one of no great consequence. This treatment should be associated with a moderate diet, and the state of the bowels be attended to. Even when the affection has passed into the *acute* stage and when the process of suppuration has commenced, may the use of cold under certain conditions be attended with success. At this period, however, Dr. Kohn recommends the use of warm baths when the irritative fever is not too great and not continued. The pain almost always ceases, or at least abates, when the patient is in the bath, and if it can be so arranged that the patient, after half an hour's stay in the bath, can at once be put to bed and made to sweat there, this method of treatment is rendered more active. The baths may be taken every day, only the bath must not be far removed from the patient's bed, for the going there and back, especially when a staircase is on the way, does an amount of harm which exceeds the good done by the bath.

With regard to the operative proceedings undertaken for the purpose of discharging pus, Dr. Kohn asserts that in suitable cases (abscess with relatively small purulent contents and covered by a thick cutaneous layer) punctures or subcutaneous aspiration are perfectly justifiable, as they never do harm and are very often serviceable. If the surgeon should wait until the bursting of the abscess, or, with an idea of seeing the pus absorbed, he will often have to deal with large collections of pus, for the treatment of which incision is absolutely necessary. Very many and various kinds of incisions have been recommended for the opening of an abscess, most of which have been devised with the view of preventing subsequent sinuses. These sinuous and partially tubercular prolongations of the original cavity do not owe their origin exclusively to the stagnation of pus, but to the associated action of a number of conditions—as the peculiar anatomical conformation of the affected region, the accumulation of loose and widely meshed connective tissue, the extension of the inflam-

mation along the lymphatics, which run in all directions, and suppuration in the neighbouring glands which there communicate with the original purulent deposit. The chief share in the production of sinuses is, however, according to Dr. Kohn, taken by the formation of cutaneous angles and folds, and the surgeon must endeavour to act against this faulty tendency as much as he is able by suitable disposition of the patient. With regard to the treatment of these fistulous canals, Dr. Kohn advises the expectant plan; early slitting-up of the canal may do harm by exciting inflammation and sloughing in a part which might readily and speedily have been healed by other treatment. Dr. Kohn recommends the occasional cauterization of these sinuses, either by injection of caustic fluids or by the introduction of pencils of nitrate of silver. With the use of the latter the surgeon should first dilate the opening of the fistulous canal with a small sponge tent, especially in cases where the direction of the canal is at right angles to the long axis of the body; this proceeding prevents closing of the upper end of the canal whilst suppuration is still going on in the deep portion, and the bad results caused by confinement of pus are thus avoided.

Opening of the abscess by caustic paste, the pain attending the use of which may be considerably relieved by the application of cold and by a subcutaneous injection, is especially recommended in cases where the wall of the abscess is thin, or where there are several purulent deposits which threaten to unite, where the patient is timid and anxious, and where the least loss of blood may prove prejudicial. Any hæmorrhage that may occur can be averted by cold or compression. After the abscess has been opened the external surface often presents the appearance of a large chancrous ulcer having no tendency to heal; in such cases the surgeon often attempts to excite healing by notching the margins of the ulcer, or applying irritants, and to favour a healthy process by administering tonics. In uncomplicated cases the ordinary treatment of wounds is sufficient. The surgeon should not do too much in cleansing the wound, as this may readily take on bad action. It is necessary to favour a free discharge of pus from sinuses which, when necessary, should be dilated by sponge tents. When a gland remains in the centre of the cicatrizing surface and prevents complete closure of the ulcer, it must be removed. This is best done by applying caustic-paste; cicatrization may be accelerated by baths and the application of fomentations and salves. Excoriation of the scar must be carefully avoided; this may lead to great loss of substance and the formation of an obstinate ulcer. Extensive cicatrices, by compressing the vessels, may cause dropsical swellings of the corresponding lower limb.

Even in cases where the bubo has opened simultaneously before the patient comes under treatment, may the use of cold be beneficial. The surgeon should save edges of skin whenever he can, for these often take part in the subsequent healing processes, even after they have been much undermined. In cases where there has been considerable undermining, and where the skin at the same time is discoloured, or the purulent secretion profuse and of a bad character, the jagged edges may be removed.

In cases of gangrenous bubo, which is met with much less frequently in private than in hospital practice, the prognosis is most favourable when the occurrence of this lesion has been favoured by over-exertion.

Rest, a suitable position, and cold applications, often suffice for improving the character of the ulcer. In cases of bubo rendered gangrenous by neglect, the abuse of irritant salves and dressings, or hospitalism, the prognosis is as unfavourable as that of hospital gangrene. In such cases the wound may in a short time spread over an enormous extent. For the treatment of this condition, Lister's antiseptic dressings are to be recommended. This plan, however, is often inefficacious: the suppuration becomes profuse, and the mortification of the tissues extends more and more, often producing in consequence of erosion of blood-vessels, hæmorrhages, which cannot be arrested without difficulty. The affected tissues are generally quite insensible, but sometimes, especially with profuse suppuration, contact with the ulcerated surface causes intense pain. But sores may be readily produced in cases of this kind, and the danger of pyæmia is very great. The treatment of this kind of bubo should be specially energetic. Powerful caustics must be applied to all the diseased tissue, local antiseptic treatment be carried out, and care be taken to support the strength of the patient, who may speedily sink. It often happens, however, that all these means fail, and that even the actual cautery fails to alter the bad character of the ulcer.

Art. 178.—*The Power of Cold in the Treatment of Gonorrhœa.*

By Gustave A. Shane, M.D., of Salem, Ohio.

(*Medical and Surgical Reporter.*)

Dr. Shane reports twenty-three cases of gonorrhœa which were quickly cured by the aid of cold—ice to the perineum—and an alkali to secure its reaction upon the urine. Once he regarded, with others, gonorrhœa as one of the most unsatisfactory and perplexing diseases to treat; but he now finds, if seen in the former stages, no difficulty in subduing it in from four to ten days without any resulting gleet, chronic prostatitis, chronic irritability of the bladder, stricture, and such other sequences as followed the old copaiba and "*squirt-gun*" methods of treatment. When he treated this disease by the use of copaiba, cubebs, the terebinthinates and caustic injections—in the same number of cases, the maximum duration of treatment was one hundred, the minimum nine days, the average twenty-six, with six cases of the above-mentioned sequences.

Art. 179.—*Laminaria in the Treatment of Urethral Strictures.*

By Robert Newman, M.D.

(*New York Medical Record*, July 1.)

The following are some of the conclusions arrived at by Dr. Newman:—

1. The bougies must be made from an unblemished piece of the plant, taken out of the middle, made with care and equal in its whole

length and size. If there is the slightest suspicion of unevenness, it should not be used.

2. That part of the bougie which will occupy the portion of the urethra below the last stricture, and particularly *that* part of the bougie which enters the bladder, must be varnished previously. Mastic-varnish can be used. If the varnish is applied just before using, the laminaria may dilate a little, but, if several coats are applied and allowed to dry, no expansion can take place.

3. As any oily substance hinders the expansion, no oil must be used. The bougie before introduction must be placed in cold water, until it gets a soft, velvet-like touch.

4. The bladder must be emptied before the operation, to avoid uneasiness and over-distension.

5. The urethra ought to be injected with water, to relax the parts and favour the moisture for rapid dilatation.

6. The measure of the urethra and seat of strictures must be carefully taken, notes made, and the bougie prepared accordingly.

7. The bougie, when ready, must be introduced at once, straight, without hesitation, twisting, or resting in its passage; otherwise it will cause pain, or, as dilatation goes on immediately, it will not reach the desired depth.

8. After insertion, the bougie must be left alone, and not meddled with, or tried to move.

9. It must be left inside undisturbed for from two to four hours, according to circumstances, consulting the feeling of the patient.

10. The patient during this time is left in a recumbent position, and attended or observed by the surgeon.

11. In removing the bougie the surgeon takes hold of the bougie, and uses, firmly and gradually, tractions in the same direction.

If some surgeons have failed with laminaria, they either have not observed these precautions, or they have had imperfect bougies, or selected impracticable cases.

This treatment is most indicated when the stricture is very small, almost impermeable, and no time can be lost, as the No. 1 bougie of laminaria can be introduced easier than the usual sounds or catheters. In a few hours the patient is relieved, and can micturate without difficulty. No bad results can follow, nor will it interfere with his attention to business. This latter advantage is a great consideration, as the treatment with divulsors, or dilators almost always causes pain, sufferings, and detention in bed and from business. As soon as the stricture is dilated so far that a steel sound of a larger calibre can be introduced, the laminaria has done its duty, and it is better to abandon its further use, and continue with other means. These are either steel sounds or galvanism.

Art. 180.—*On the Aspiration of Gas and Fluids from Irreducible Herniæ.*

By M. A. Muron.

(*Gazette Médicale de Paris*, No. 33, 1872.)

There is decidedly a current of opinion which has led most surgeons to make a capillary puncture into the tumour formed by strangulated intestine, and to remove by aspiration all that is found contained in this intestine. These surgeons follow the idea that the involved portion of intestine in consequence of the strangulation, however slight this may be supposed to be, becomes swollen and distended—in short, is very much congested; and they are also convinced that this congestion determines both an external and an internal effusion. In the peritoneal sac there is a *sero-sanguinolent* fluid; in the intestinal cavity there is a *muco-sanguinolent* fluid.

The quantity of exuded fluid will vary very much according to the stage of the hernia, the degree of strangulation, the age of the subject, and the condition of the organism; but there will always be an exudation into both cavities, and the only special difference existing between these two series of fluids will be due to its nature—serous for the peritoneum, mucous for the intestine. Most surgeons, finally, are persuaded that the removal of this muco-sanguinolent fluid will much facilitate the return of the intestine, and with this object in view make use of some kind of aspirator, as Dieulafoy's, Potain's, or Regnaud's.

We propose to consider the above *idea*, and to make out the experimental results of the *current of opinion*.

With regard to the first point, no kind of doubt can exist. Great differences may be presented in the various kinds of hernia with regard to the quantity of the fluid, but the reality of the fact may be affirmed. Without doubt if a hernia be examined just at its commencement there will be no exuded fluid, but in the course of a short time an abundant exudation will be produced. Without doubt, again, if one takes a hernia manifestly strangulated from the moment of its production, the fluid exuded, *in proportion to the volume of the hernia*, will be formed more rapidly and in more considerable quantity in a case of one of those voluminous herniæ, concerning the irreducibility of which there has been so much discussion.

We do not wish to enter into a debate on this subject. We show only that there are several varieties of intestinal hernia. Some veritably strangulated in every meaning of the word, are characterized by their small size, by their appearance after having been kept up for a long time with a truss, and by their presenting themselves in the form of hard rounded and uniform tumours; others, much more voluminous, are in general less tense, more supple, and have the habit of appearing and disappearing spontaneously. Those are the *inflamed herniæ* of Malgaigne, or *the herniæ in the first stage of strangulation*, as described by Goyrand, of Aix.

These are extreme types, but in practice one finds a whole series of intermediate states which occasionally presenting a very great difficulty to resolve, sometimes approach near to the first series, at other times, on the contrary, may be classed with the second.

In all there is an obstruction to the circulation, which is the greater as the strangulation is more considerable. At first there is only a relaxation, an incomplete stasis, a kind of repletion. But in a short time all these phenomena become well marked, the arrest is complete, the turgescence of the intestine evident, and its coloration passes through various tints; it is red at first, then bluish, and finally black. One more degree, and there is gangrene of a portion of the hernial loop, or even of the whole loop.

Though rapid in their evolution when one deals with true strangulation, these various stages of congestion may be produced slowly and successively, so to speak, in cases of large hernia. The entire system of the circulation in the protruded part is filled and distended; the capillaries are full of blood globules, and plasma, and they seem to make an effort to retain these contents; but it may be conceived that the internal pressure soon overcomes their force of resistance, they become ruptured, and then pour out sanguineous fluid in the form of exudation.

The presence of the intestinal glands enables one readily to understand how fluid exuded into the intestinal cavity becomes viscid and mucous, whilst that in the peritoneal sac is simply sero-sanguinolent.

One may see that this exudation of fluid, which exudes from the surface of the intestine, is itself subordinate in great part to the congestion. We do not say, however, it has any proportion to this, and for this reason. Two subjects of hernia being given with the same degree of congestion, if one of these herniæ be more voluminous than the other, the fluid effused in it will be more considerable. In addition, if one of those patients be feeble and in poor condition, the other strong and capable of offering great resistance, it is certain that the exudation will be more abundant in the former. Whence it results that one may consider as demonstrated this fact of the absolute subordination of the intestinal or peritoneal effusion to the congestion of the intestinal hernia; and although it may be permitted one to hold that the quantity of exuded fluid is proportionate to the size of the hernia, and to the force of resistance of the organism, still there is nothing to authorize us in concluding that there is this absolute relation.

In summing up the previous observations it seems to us possible to affirm that in every hernia there is an effusion of sero-sanguinolent or muco-sanguinolent fluid; an effusion less abundant when the hernia is small, much more considerable when the hernia is of large size. This effusion commences at an early period and proceeds rapidly in cases of true strangulation, but is produced much less rapidly and proceeds very slowly in cases where the hernia is large and where the neck of the sac presents a large opening. Cases, however, of the latter kind may become acute if the patient has made a too violent attempt to reduce the tumour.

With regard to the question of the gas which may be included in the interior of a protruded portion of intestine, whatever may be its origin, either from the intestine itself, from the blood, or from the decomposi-

tion of exuded fluids, we can state very little that is precise. We believe that in recent herniæ its influence is very small, and that it is only in hernia of some duration that it plays any part in the prevention of reduction.

A herniated portion of intestine contains fluid and gas; by removing these can one facilitate the reduction of the hernia? This question now remains to be considered, and for assistance in this consideration we will pass in review the different cases in which this method has been applied.

M. Fleury, of Clermont, sent to the Society of Surgery, in July, a note in which he begged the members to publish each of the cases of his practice, in order to establish indications and contra-indications.

As yet indeed the cases have been very few, and it would be rash to attempt to lay down at the present day any absolute indications, and the more so as but few surgeons have hitherto published the results of their attempts.

About a year ago M. Duplouy announced a success in the reduction of hernia, by practising the aspiration of the fluid and gaseous contents of a loop of intestine. This caused great sensation in the surgical world. The practice corresponded to an idea, and to M. Duplouy belongs the honour of having been the first to apply it.

The case, which was published in the *Gazette Hebdomadaire* (1871), was one of a man eighty-two years of age, who had been the subject of inguinal hernia for forty days. An attempt at taxis was made, but failed. On the following day aspiration was practised. The intestine could then be readily reduced and a permanent cure resulted. This succinct report suffices amply to show that this ought to be classed among the incarcerated or inflamed herniæ. The date of the hernia and the complete absence of abdominal symptoms would remove all doubt on this point.

We find in a thesis published by M. Autun, in 1871, another case, from the same surgeon, but the report is very brief and gives no details either as to the date of the hernia or its nature. M. Duplouy simply states, "I have practised aspiration in another case of hernia, and with success."

M. Dugué, of Mans, has also practised puncture and aspiration in a case of irreducible trigeminal hernia on the left side. Gas and fluid were discharged, but the taxis was not successful. An operation was then resorted to; some peritoneal adhesions were found, which had previously prevented the return of the tumour. The cure was complete.

Here we have an unsuccessful instance of aspiration in a case of inflamed hernia.

M. Dolbeau has had occasion to perform aspiration, and this case may be regarded as a successful one. The patient was a man sixty-two years of age, affected with heart disease, and who had had a hernia for four or five days. The patient when first seen by M. Dolbeau was in a state of asystole and an operation could not be performed. On the following day, however, as the patient was still living, M. Dolbeau decided on practising aspiration and puncture. Gas and fluid were let out and the intestine was then easily reduced. After the death of the patient, which took place two days later, no traces of peritonitis could be found, and reduction of the intestine had been complete.

M. Panas, at a sitting of the Society of Surgery, on July 31st, mentioned ten cases in which he had tried aspiration. One case was that of an old man, who had a large scrotal hernia with fluid enclosed in the hernial sac. The patient had fæcal vomiting. Aspiration was practised, and 100 grammes of fluid withdrawn. The taxis was then attempted, but without success. An operation was then decided upon. The loop of intestine was found to be red and inflamed; the constriction was readily performed, and the hernia returned. The patient speedily yielded to peritonitis.

Such are the different cases in which have been practised puncture, and the aspiration of gas and fluid contained in herniated intestine. In the cases of large incarcerated or inflamed herniæ, one may count as many successes as attempts. The last case cannot be considered as bearing upon the question, seeing that only puncture of the sac was made.

Let us now regard other cases which have been published, and which treat of true strangulated herniæ. But we will first repeat the words of M. Duplouy, which are given in the report of his first case. "This method, the indications of which can be distinctly laid down only by experience, seems to me to be especially applicable in cases of tolerably large enterocele affected with strangulation, consecutive either to inflammation or to incarceration. I have lately had under my care three cases of crural hernia, in which the swellings were very tense, very small in size, and apparently contained very little gas and still less fluid. In these cases I decided at once to perform the ordinary cutting operation." Thus the originator of the method does not advocate it in cases of strangulated hernia. But, as he takes care to state, experience will decide the question. Unfortunately, with this kind of hernia the period during which the surgeon can attempt the taxis is very restricted, so that aspiration can be but rarely praetised.

M. Richet has had an opportunity of trying this method. He practised puncture and aspiration in a case of recently strangulated crural hernia. A hollow needle passed into the swelling gave exit at first to a few drops of sanguinolent serosity evidently proceeding from the hernial sac; afterwards, on pushing the needle further, a viscial and inodorous fluid of the consistency of simple syrup was withdrawn. The tumour then diminished in size, and M. Richet then did nothing more, as he thought that the tumour would return by itself. On the following day, however, as vomiting had persisted, kelotomy was performed. The patient recovered.

It would certainly be ungraceful if we took upon ourselves to regard that the method of aspiration in this case had not been carried out in its entirety; the course taken by the surgeon is justified by the success which he obtained. But yet the case is not the less remarkable. A strangulated crural hernia remained for more than twenty-four hours after the extraction of fluid in the midst of the strangulating agencies, and yet underwent no kind of gangrene.

In the following case taken from the reports of the Society of Surgery a complete attempt was made.

A man who had suffered from strangulated scrotal hernia for sixteen hours came under the care of M. Verneuil. The hernia had appeared sud-

denly, and was therefore veritably strangulated. No attempt had previously been made at reduction.

Strangulation at the neck of the sac was diagnosed. As the tumour was a fluctuating one, puncture and aspiration were performed. About 400 grammes of a rose-coloured fluid were withdrawn; there was then hydropsy of the sac. After this evacuation a medium-sized hernia could be felt. An attempt was made to reduce the hernia, but this was unsuccessful; puncture and aspiration were tried a second time but nothing could be withdrawn. On a third puncture a small quantity of pink viscid fluid flowed away. It was again tried, but the attempt was not prolonged; kelotomy was then performed and the constriction at the neck of the sac divided. The intestine was slightly livid. The loop of intestine presented three perforations, two formed at the first puncture, one at the second. The intestine having been set free, a portion of epiploon was ligatured, the hernia being an entero-epiplocele. Reduction was then effected. The patient recovered.

So far we find want of success from the method, but no bad result from it.

Here, on the contrary, is a case of strangulated congenital inguinal hernia on the left side in which there was absolute success.

The patient was a young man who, after a fatiguing journey, was attacked with acute colic, accompanied by vomiting. A large tumour had formed in the left groin. On the following day an unsuccessful attempt was made at taxis, and on the day after, that is to say, at about the fortieth hour, puncture and aspiration were practised. At this period the patient's features had become altered, fever had been set up, and the hernial tumour was large, elongated, and followed the course of the inguinal canal. The testicle was in contact with the intestine.

The taxis had been applied with care, but without any good result. Aspiration gave issue to 120 grammes of intestinal fluid and some gas. The tumour then collapsed, and could be readily returned by pressure from below upwards into the abdominal cavity. In a short time there was complete recovery.

Such is the remarkable case which has been communicated to the Academy of Medicine by M. Demarquay.

Taking into consideration these cases which we have just quoted, and which are all that have hitherto been published, it seems to us to be difficult to lay down the least indication. A complete study of the matter has yet to be made. M. Demarquay proposes that this mode of treatment should be again applied:—

1. To all congenital herniæ and to recent herniæ strangulated at the moment of their formation.

2. To old herniæ which were quite reducible a few days before strangulation, and in cases of recently strangulated umbilical herniæ.

3. This aspiration of fluids and of gases, having for its object the greater facility of the taxis, ought to be practised only at an early stage, and at a period when there is almost a certainty of reducing into the abdominal cavity an intestinal loop which is unchanged and susceptible of regaining its functions.

Art. 181.—*On Strangulated Hernia, and its Treatment.*

By Sir James Paget, Bart.; V.P.R.S.

(*British Medical Journal*, April 27.)

The following is a synopsis of a recent lecture by Sir James Paget on strangulated hernia and its treatment, which was prefaced by the remark that, though he had operated a hundred times, to obtain conclusions of real value would need the tabulation of at least a thousand cases:—

"Generally speaking, in a case of hernia with signs of strangulation present, and reduction by ordinary means cannot be accomplished, an operation should at once be performed: in some cases, although the hernia is irreducible, the symptoms of strangulation are slight, obscure, or incomplete. It is an easy rule for all these cases that you should operate when strangulation is suspected: this rule you must avoid, and learn the hard one to discriminate the cases that require operation.

"The irreducibility of the hernia is a fallacious sign of strangulation, and the presence of the other local signs even in a marked degree is not decisive of strangulation, and is not sufficient to prove the need of operating when the remoter signs are not present. The local characters usually present in a strangulated hernia, and sometimes the remoter signs, may be imitated in an inflamed hernia which is not strangulated. Generally, in the inflamed hernia, without strangulation, the local signs precede and greatly predominate over the remoter and general signs; while, in a hernia which is inflamed after becoming strangulated, the remoter and general signs will still predominate over the local, and the history will tell that they preceded. If these means of discrimination fail, you must operate if you cannot easily reduce the hernia; the risk of operating is small in comparison with that of waiting, for an inflamed and irreducible hernia may at any time become strangulated.

"A hernia that has come down quickly, and the more it exceeds its usual size, the less is the probability of its being reduced without operation.

"Again, the harder, more tense, and plentiful a hernia is, the less the chance of reduction without an operation.

"Again, if the remote and general signs of hernia are present, and the hernia cannot be reduced, you must operate; or if there be a swelling which may be a hernia, though it seem not likely to be a strangulated hernia, the operation must be performed at the seat of swelling.

"If a patient have two herniæ that are irreducible, and signs of strangulation, and you cannot tell which is strangulated, you must operate on both.

"One or more actions of the bowels, after symptoms of strangulation have set in, are of no weight against the propriety of operating; even frequent and regular action is not an absolute prohibition, as strangulation may involve only omentum or only a part of the circumference of a portion of the intestine.

"As a rule, while the bowels act you should not operate, unless all the other signs of strangulation are well marked.

"The sign we should most rely on as commanding the operation is vomiting. The rule is safe that recent irreducibility and vomiting are enough to justify the operation, even though there be no other signs of

strangulation present. While there are notable kinds of vomiting characteristic of strangulated hernia, we should not be misguided by waiting for any particular kind. Any kind of vomiting, if it be repeated, is enough to justify operation in a hernia recently become irreducible.

"Cessation of vomiting in the extreme condition of strangulated hernia is a token of evil rather than of good, if general improvement do not coincide with it. The pulse is 80 or 90 in a majority of ordinary cases in the early stages, and becomes more rapid as the symptoms of strangulation become more marked; the respirations usually are in due proportion to the pulse."

For the reduction of strangulated hernia without operation, Sir James Paget laid down the following general rules:—

"In cases, for instance, when the patient vomits fæcal matter, and has peritonitis, or is in collapse, with a small, rapid pulse, hiccough, or other such extreme signs, there should be no attempt at reduction without operation.

"When the coverings of the hernia are so inflamed as to make it probable that sloughing or suppuration has taken place beneath them, reduction should not be attempted without operation; and even when less inflamed, none but slight and brief efforts at reduction should be made.

"The longer the signs of strangulation have existed the shorter should be the efforts at reduction, but the intensity of pain in recent or acute hernia should not deter one from making the attempt.

"In hernia which has been habitually reducible and become strangulated, you should operate at once. It is a safe rule of practice that, after a warm bath, and a few hours' rest in bed, a single attempt at reduction should be made; should this fail, chloroform or ether should be given, and then in some cases, but not in all, a second attempt made; this failing, the operation should be performed while the patient is still insensible.

"The hot bath is useful in all cases that are not bad, unless in old and feeble persons; the patient should be simply soothed or relaxed in the bath, then wrapped in warm blankets, put into bed, lying on his side or his back, with his knees drawn up, or with his pelvis a little raised, and then, after an hour or two of complete rest, to attempt the reduction. The employment of rest and the bath are helped by opium when the hernia is painful. In the old, and others who may have had inactive bowels long before the strangulation, an enema of a large quantity of liquid should be used. Purgatives should not be used if there are marked symptoms of strangulation.

"After the warm bath and rest have been tried, you may give chloroform or some other anæsthetic. In making the attempt at reduction you must be gentle and self-restraining, mindful of the delicacy of some of the structures you are handling, and that you may do them much more harm than would come of the operation which you are trying to arrest. These cautions are the more necessary because, when the patient is under chloroform, you have nothing but your own sense and senses to tell you how far you may go without doing harm. Chloroform is most useful in the herniæ of which the difficulty of reduction is chiefly due to muscular resistance, in the recent, or in the recently much enlarged; in the inguinal more than in the femoral; and in these

more than in the umbilical; in the painful more than in the painless. In herniæ that have only recently come down, and are intensely painful, it is right to use chloroform or ether without waiting for the influence of the warm bath, but more commonly, if there be danger in waiting three or four hours, it is because strangulation is so far advanced that the operation ought to be done without any previous attempts at reduction.

"After the warm bath, rest, and chloroform have been tried, and the reduction is not accomplished and strangulation exists, you should operate while the patient is still under the influence of chloroform; but if strangulation is not present you may wait, but must watch impatiently, for the hernia is likely soon to become strangulated. While waiting, ice or warm dressings, enemata, aperients, or opiates may be used. Tobacco and curious postures, and shaking the legs up and the head down, and the cupping-glasses, are more dangerous than the operation which they are intended to avert. For doubtful or partial reduction there is one practical rule—operate if the symptoms of strangulation are not relieved. In cases in which reduction seems complete but the symptoms of strangulation are still present, operate, if you can feel a lump at or near the hernial ring.

"Old age and disease may add to the risk of an operation for strangulated hernia, but they must be accepted. A patient must not be allowed to die with a strangulated hernia, if by any means whatever the strangulation can be relieved, and you must not be averted from the operation by the number of deaths that follow it. The deaths after the operation may be fifty per cent., but the deaths due to the operation are not more than two or three per cent."

Art. 182.—*A Case of Painful Affection of the Left Breast in a Woman.*

From the Clinique of M. S. Duplay, of the Hôpital de la Pitié.

(*Gazette Médicale de Paris*, No 23, 1872.)

"This woman is the subject of an affection which is rare, and which may present two degrees. The pains which it causes are lancinating, and come on after short intervals. In this case their starting point was an injury received about twenty years ago, and since then they have never entirely ceased. The patient has led a miserable existence and has been under the care of several surgeons. Various kinds of medication have been tried, but without success; bromide of potassium alone has afforded amelioration, which, however, is temporary.

"The patient states that twice or three times in the week, sometimes while she is asleep, sometimes during the day after slight fatigue, as with going upstairs or with walking quickly, she is suddenly attacked with violent pain. This pain almost invariably starts from a fixed point between the mammary gland and the edge of the axilla, below the great pectoral muscle, and radiates along the corresponding intercostal spaces. The patient at the same time suffers from violent palpitations of the

heart, feels as if she would be choked by a ball rising in the throat, and finally loses all consciousness. In addition to these phenomena, there is an almost absolute anæsthesia of the superior half of the body.

"This affection presents some resemblance to angina pectoris. As in the latter affection one finds exaggerated movements of the heart, symptoms of suffocation, syncope at times, and numbness. The pain affects likewise the left side. But in angina pectoris the initial pain seems to proceed from deeply-seated parts, usually from the heart, and it radiates along the branches of the brachial plexus. In this case the pain on the contrary is superficial, and seems to be seated immediately under the integument of the breast, and to follow the track of an intercostal space. These characters, however, would not suffice for the determination of the nature of the affection in the absence of an element which thoroughly elucidates this case.

"The patient has always asserted that she could feel under the skin of the breast a small tumour, which increased in size at every menstrual period, and which was the starting point of the severe pains. After many unsuccessful attempts to find this, M. Duplay was at last able to make out its existence. It was situated under the inferior edge of the great pectoral muscle, beyond the external border of the gland. It was very moveable, of the size of a small pea, and when it was compressed, the patient made a sudden start as if a sensory nerve had been nipped.

"Sir A. Cooper was the first to describe this painful affection of the breast, under the name of *irritable tumour of the breast, neuralgia of the breast*. He distinguished two varieties—a neuralgic affection without a tumour; and a second variety with a tumour situated over the track of some filament of a thoracic nerve, and independent of the gland. Velpeau also gave a description of the affection and several cases of the kind were reported by Dr. Rutz, in the *Archives de Médecine* of 1843.

"M. Duplay has described this affection under the name of neuroma, without, however, attempting to find any kind of analogy with the as yet very imperfectly known histology of the neuroma of authors. He wishes simply to express by this designation that these tumours of subcutaneus cellular tissue have the neuralgic characters of neuroma.

"The recognition of this affection, though a rare event, is one of great importance. In fact, the least painful induration of the breast very naturally causes the woman to suspect the existence of a cancer. These small tumours are met with in especial frequency amongst multiparæ and women who have suckled their children. They are not serious, except through the nervous disorders which they excite. There is seldom any necessity for the surgeon to interfere.

"The amelioration produced by the bromide of potassium in this case was a motive for continuing its use. M. Duplay also administered hypodermic injections of morphia. However, the certainty of the existence of a tumour and of its seat and limits seem to furnish indications for surgical interference. The patient may probably be cured by the removal of the tumour or by multiple subcutaneous sections isolating it from all its connexions and rendering it a foreign body in the midst of living tissues."

Art. 183.—*On Thoracentesis in the Treatment of Empyema.*

By M. Gosselin.

(*Gazette Hebdomadaire*, No. 20, 1872.)

In some remarks made during a recent discussion at the Academy of Medicine of Paris, M. Gosselin commented on the different proceedings employed for the evacuation of purulent collections in the pleura. Simple puncture, in some cases, results in undoubted cure; but these happy results have been observed generally in infants, in whom the pleura has much more tendency than in adults to regain the properties and functions of a serous membrane.

In the adult, where purulent pleurisy is generally cured only through the adhesion of the two serous layers, one ought not to rely upon puncture for bringing about this result; it should be employed only as a means of diagnosis, and in the treatment of the morbid condition recourse must be had to more effectual means.

In three cases of traumatic purulent pleurisy, and in three others of spontaneous purulent pleurisy, M. Gosselin employed drainage with a slight modification of the practice of M. Chassaignac. This modification consisted in performing the posterior and first opening with a bistoury, in order to afford at once a free issue to pus and false membranes; the second, anterior or counter-opening, was made for the purpose of passing the tube with a trocar. The three cases of spontaneous purulent pleurisy, and one of the cases of traumatic pleurisy, were cured by this means; in the two remaining cases, in which traumatic pleurisy was complicated with fractures of the ribs and afterwards with gangrene of the lung, the patients succumbed.

M. Gosselin attaches to the distinction between spontaneous and traumatic purulent pleurisy a value and importance which have been contested by M. Jules Guerin.

M. Gosselin thinks it necessary to insist very particularly upon the time during which the drainage-tube is allowed to remain in the thorax. It is impossible to assign a fixed limit for this sojourn, the duration of which must necessarily be subordinated to the complete evacuation of the fluid and the obliteration of the pleural cavity. In one case, M. Gosselin was enabled to withdraw the tube at the end of two and a half months. In another patient, the tube was removed for the first time at the end of three months; but, six months later, the pleuritic effusion was reproduced; drainage was then practised again, and kept up for six months. Ten months later there was a second relapse, which necessitated a third application of the drainage-tube. This was continued for eight months. At the end of the year 1867 the patient was discharged as cured, and did not return.

These examples show that surgical drainage, besides constituting a serious proceeding in the treatment of empyema, has not yet been brought to an ultimate stage of perfection, since it does not free the patient from the chances of relapse, and always leaves undecided and uncertain the question of the time required for the process of obliteration of the pleura.

M. Gosselin, in declaring that drainage is a very superior proceeding to incision, still recognises that, in certain cases, it is necessary to combine these two practices; whenever, for example, one wishes to give

exit not only to pus but also to false membrane accumulated in the pleura.

In comparing drainage with the proceeding of M. Potain (puncture with a trocar, introduction and retention of a caoutchouc tube, evacuations and washing out by the siphon system), M. Gosselin attributes to the latter the advantage of avoiding, with certainty, the introduction of air into the cavity containing the purulent collection; but he conceives it to be attended with the serious inconvenience of not allowing the evacuation of false membrane.

M. Gosselin concluded by stating that the choice of operative proceedings in cases of empyema ought to vary according to circumstances, and according to the indications resulting from the nature and consistence of the pleuritic effusion.

Art. 184.—*On the Removal of Both Ovaries at one Operation.*

By T. Spencer Wells, F.R.C.S., Surgeon to the Queen's Household, and to the Samaritan Hospital.

(*Diseases of the Ovaries*, pp. 478. London. 1872.)

There can be no doubt, Mr. Wells writes, that the removal of the second ovary does add to the danger of the single operation. Of five hundred cases of completed ovariotomy by Mr. Wells, including both single and double operations, there were 127 deaths, or 25·4 per cent. If we deduct from the five hundred twenty-five cases where both ovaries were removed, this would reduce the number of single operations to 475, and the deaths to 115, with a mortality of 24·44 per cent. But as of the twenty-five cases of double ovariotomy eleven died, the mortality is 44 per cent., or nearly double that of the single cases. This is quite sufficient to show that the surgeon should hesitate and certainly not remove the second ovary without good reason. The author has several times been begged by patients before the operation to remove the second ovary, even if it were healthy and the risk of the operation increased, in order that they might be spared from the possibility of being again subject to similar disease; and medical men have occasionally supported this not unnatural wish of the patient. Mr. Wells has always replied that he should object to the removal of a healthy organ if that removal endangered the success of an operation which was clearly necessary; that as a rule the removal of one ovary would not be followed by disease of the other; that the double operation would necessarily render the woman sterile; and that there might probably be some consequences of the removal of both ovaries, such as an undue deposit of fat, or obscure nervous symptoms, or some change in feminine physiological peculiarities, which would be objectionable if not directly prejudicial. For these reasons Mr. Wells is of opinion that a healthy organ should not be removed from any woman at any age. The amount of apparent disease in an ovary which would justify the removal of the organ may vary with the age and condition of the patient. In a woman past the age of child-bearing a small amount of apparent disease would justify removal of the ovary, whereas a surgeon should hesitate before he condemns a young woman to permanent sterility.

Art. 185.—*On the Treatment of Double Pedicle.*

By T. Spencer Wells, F.R.C.S., Surgeon to the Samaritan Hospital, &c.

(*Diseases of the Ovaries*, pp. 478. London. 1872.)

The chief point of practical importance in double ovariotomy, Mr. Wells states, is the mode of dealing with the pedicle. He has once secured both pedicles by one clamp, and has once used two clamps, one on each pedicle, and kept both clamps outside, with no more inconvenience to the patient than if one clamp only had been used, and with a completely successful result. In another case Mr. Wells tried to do this, but the pedicles were too large. He accordingly transfixed them by a large pin and tied both pedicles together behind the pin. The pin thus became a sort of clamp and secured the extra-peritoneal separation of the pedicle. The author has secured one pedicle by a clamp and the other by ligature, fixing the latter to the clamp, in this way conveniently effecting the extra-peritoneal mode of treatment; and this is the plan he should be disposed to recommend whenever it is practicable. More than once, after securing one pedicle by a clamp, owing to the absence of a pedicle to the other tumour, Mr. Wells has transfixed and tied the attachment, cut the ends of the ligatures off short, and left them in the abdomen. He has also treated both ovaries in this manner, and he has, after tying one or both pedicles, brought the ligatures out through the wound. The results are strongly in favour of the extra-peritoneal method of dealing with both pedicles whenever it is possible. Thus of nine cases where both pedicles were fixed outside by one or two clamps, or by applying a clamp on one pedicle and fixing the ligature on the other to the clamp, or using a pin to transfix the pedicles and tying them behind the pin, which thus became a sort of clamp, in either way securing both pedicles outside the abdominal wall, seven recovered and only two died. Of six cases where the pedicle on one side was kept out by the clamp, and the other pedicle tied, the ligature being left in, four recovered and two died. Of six cases where both pedicles were tied and the ligatures left in, four died and two recovered. Of four cases where the ligatures were brought outside, acting as a drain and keeping the lower angle of the wound open, only one recovered and three died. Of those who recovered, one died two years afterwards of hemiplegia, another two years afterwards of cardiac dropsy, and a third six months after operation of peritoneal cancer. Ten were in good health in 1872.

Art. 186.—*Ovarian Dropsy Operated on during Acute Peritonitis.**

By Richard T. Tracy, M.D., Melbourne.

(*British Medical Journal*, October 19.)

In this paper the author gave an account of a patient aged thirty-one, married five years, the mother of two children: she had noticed the

* Read at a Meeting of the Royal Med. and Chir. Society, Oct. 8.

tumour fifteen months. When first seen she was in a hectic condition, with a rapid and feeble pulse, and suffering great pain from the enormous distension of the abdomen. Some relief was at once obtained by tapping and drawing off two quarts of thick colloid fluid (the tumour was multilocular). After the tapping she was removed to the hospital and carefully examined. She measured thirty-eight inches in circumference, nine inches from the ensiform cartilage to the umbilicus, and eight and a half inches from the umbilicus to the pubes. Her stomach was very irritable, and she had to be supported by nutrient enemata. Her temperature was 102 deg.; pulse 120; the abdominal tenderness extreme. As it was evident she would soon sink unless something could be done to relieve her, ovariotomy was performed on March 19th. The tumour was multilocular, semi-solid, and almost universally adherent; the peritoneal surface was deeply congested, much thickened, and full of flaky lymph, which was removed in large quantities. The pedicle was secured with a clamp, and the wound closed by deep silk sutures and superficial ones of horsehair. Two hours after the operation there was a considerable fall in the temperature. On the fourth day there was a large escape of gas and fœtid fluid from the wound, and from this time recovery was rapid and finally complete. The author expressed his opinion in favour of bichloride of methylene as an anæsthetic, and recommended the extra-peritoneal treatment of the pedicle by the clamp wherever it was practicable.

Art. 187.—*Excision of Part of the Neck of the Uterus.*

By Evory Kennedy, M.D., late Master of the Dublin Lying-in Hospital.

(*British Medical Journal*, August 10.)

The following case is recorded by Dr. Kennedy:—

"Dr. Kitson of ——, brought a patient from the country, suffering from ulceration of the os uteri. The neck was enlarged considerably, and elongated; the ulcer, which impressed us both as presenting all the characters of malignity, occupied about one-third of the neck. It had taken a rapid course, bled at intervals freely, and upon the slightest touch, and was attended with pain, sleeplessness, and marked constitutional disturbance. It was, however, circumscribed and limited to the part ulcerated; the remainder of the neck and os being healthy to the appearance and touch, although larger than natural. The lady had borne children. The part of the neck engaged extended from the posterior along the left side of the os, and the diseased structure appeared to occupy the entire substance of the wall. Under these circumstances, the case promised little or nothing from the application of the ordinary caustics, and the choice appeared to lie between the free application of potassa fusa and excision. The latter was determined on; first, because of the limited extent of the part engaged; secondly, because of the apparent malignancy; thirdly, from the difficulty of destroying by the potass the whole diseased structure, without extending its action to the

adjoining vital parts. On the other hand, the diseased structure came well within our view; the neck was long, affording facilities for the use of the knife. The patient was placed on her back. The vaginal wall and labia were distended by four brass tractors, firmly held by Dr. Hans Irvine and Dr. Kitson. An ebony spatula, nine inches long and half an inch broad, was introduced and placed within the os. This I held firmly in my left hand, whilst I introduced the scalpel which I now exhibit, which, you perceive, has a handle seven inches long, while the blade is scimitar-shaped. Cutting from without inwards towards the resisting spatula, commencing near the point of junction with the neck and body of the uterus, above the central part of the diseased structure, by two divaricating incisions ∧, a triangular section was removed. I was prepared to draw the uterus down with the double tenaculum; but this was unnecessary, from the perfect manner in which my assistants used their tractors. This allowed me the assistance and security of the spatula to cut upon. It has occurred to me that, in a case where excision is preferred, and where the facilities I describe do not exist, the spatula might be armed on the reverse side with two hooks, when it would perform the double office of uterine tractor and spatula, as necessary. The vagina was simply plugged with Ruspini's styptic. There was scarcely any hæmorrhage. The patient recovered speedily and perfectly, and in about two years afterwards conceived and carried a living child to the full period. Her labour was easy and natural; and I had an opportunity of examining her at an interval of several years afterwards, when she was quite well, and the uterus, with the exception of the loss of a portion of the neck, was perfectly sound."

Art. 188.—*On Ovariotomy.*

By Washington L. Atlee, M.D.

(*Medical Press and Circular*, July 10.)

At the annual meeting of the American Medical Association, Dr. Washington L. Atlee, of Philadelphia, described in minute detail his own method of preparing the patient, of operating, and of after-treatment. Among the points brought out were these: For evacuating the bowels beforehand, he preferred castor-oil to any other means. As an anæsthetic he always employed a mixture of chloroform and ether, equal parts. During the operation the patient must be kept warmly covered with blankets, only the abdomen being exposed. Except when compelled to, in very rare cases, he never made the incision more than three inches in length, and he did not think that even extensive adhesions often required a longer one. In examining for adhesions he decidedly preferred using his fingers to sweeping a sound around the tumour, as advocated by Dr. White. For the pedicle he had invariably of late years employed the clamp, and he noted certain advantages in his own form of this instrument. He had once lost a patient by strangulation of the intestine from its adhesion to the stump; and, thinking this accident liable to occur again, he had never since returned the pedicle

into the abdominal cavity. As a compress and support for the abdomen, he preferred thick layers of cotton covered by a broad band of muslin. This was soft and warm. His after-treatment was expectant, opium or chloral hydrate being given only when indicated, and by the rectum or hypodermically, if not tolerated by the stomach.

Art. 189.—*Removal of Inverted Uterus by Ligature.**

By Henry Horton, M.R.C.S.

(*British Medical Journal*, August 24.)

The case was of at least two years' standing. It had been thought to be and treated as polypus, but the ligature had not been applied. At each menstrual period the patient was almost drained to death, and for a very considerable time before removal there had been continual menorrhagia. To remove any doubt of the uterus being inverted, a most careful examination was made, both digital and by speculum. The abdominal parietes were so flaccid that the finger was easily pressed into the os in its inverted position, whilst two fingers of the left hand retained the fundus in a fixed position. There was not a single bad symptom after the application of the ligature; not even the slightest hernia, from which Mr. Horton concluded that there was (if one might use the term) union by the first intention, and that of sufficient strength to enable the obliterated os to bear the weight of intestine in a short time after the operation. The patient was able to walk, perform her household duties, and, in fact, to enjoy her existence in a way which she had given up all hope of ever doing again.

Art. 190.—*A New Method of Treating Hydrocele.*

By S. M. Bradley, M.R.C.S.

(*British Medical Journal*, July 1.)

Mr. Bradley states that as the serous tissue of the testicle is, from its physiological nature, liable to take on adhesive action, and that, from the character of the secretion poured out in a hydrocele being inflammatory and not dropsical, it would even be prone to do so, he was led to the inference that simple tapping, followed by firm and equal strapping of the affected side, would probably be followed by an obliteration of the vaginal sac and a consequent radical cure. He tested the accuracy of this reasoning in the case of a medical man with a large simple hydrocele which had been tapped several times, and the last time injected with iodine without success. "After explaining my object to him, I tapped the hydrocele, drawing off half a pint of fluid, and tightly strapped the affected testicle with soap-plaster. This was done at my own house, and the patient walked home, a distance of about a mile,

* Read before the British Medical Association.

immediately afterwards, and continued to go about during the process of recovery, which probably took place in about ten days; I say probably, as I kept up the pressure for three weeks without allowing the testicle at any time to remain unsupported. This case occurred eight months ago; since then I have followed the same course in three other instances, and in each with an equally satisfactory result. In no case was there any fresh effusion of fluid."

Art. 191.—*A Mode of Operating for Radical Cure of Varicocele.*

By H. B. Davison, M.D., San Francisco.

(*Pacific Medical and Surgical Journal;* and *New York Medical Record*, October 1.)

Dr. Davison has adopted a new mode of operating for the radical cure of varicocele, for which he claims three great advantages over any other means:—

First, by perforating only one wall of the scrotum, less pain, less inflammation, and less risk of adhesion of the wounded sac and spermatic cord.

Second, by placing the patient in a recumbent posture when the operation is being performed, so that no blood may be enclosed in that portion of the vein cut off from the circulation, the resultant inflammation will be much less, and the testicle will not swell so much, and absorption will be accomplished in much less time.

Third, by removing the ligature before it cuts through the vein, the risk of phlebitis is lessened, and the patient is enabled to resume his ordinary duties much sooner.

Those who have been operated on have no return of the disease, and it would require a very close examination of the parts to discover that any operation had been performed. In one case the patient had been wearing a suspensory bandage for over ten years, and the left testicle was much atrophied. It is now about sixteen months since the operation, and the testicle has regained its normal size, and the patient has a corresponding increase of sexual power.

Art. 192.—*On the Treatment of Ante-Scrotal Urinary Fistulæ.*

By James R. Lane, F.R.C.S., Surgeon to St. Mary's Hospital.

(*British Medical Journal*, August 24.)

Mr. Lane, in commenting on the address on Surgery delivered by Mr. Pemberton to the British Medical Association, states there is one point referred to by him on which he would beg permission to say a few words.

Mr. Pemberton says: "In reference to the repair of penal and scrotal fistulæ, I would remark that they can alone be treated satisfactorily by the urine being drained through the rectum, or (as in a case which he

mentions) through the perineum. Even their union by first intention is a myth; but union may be obtained by keeping the granulating edges together by some artificial means, at the same time that vivacity is maintained in them by the use of the acetum lyttæ."

Mr. Lane entirely concurs with Mr. Pemberton that such fistulæ can only be treated satisfactorily by draining away the urine temporarily through the rectum or perineum; this is, in fact, an essential condition of success; but he demurs to his statement that union by first intention is a myth, and he thinks it would be a matter for regret if this expression of opinion, coming from so trustworthy an authority, should discourage surgeons from attempting plastic operations in such cases, and lead them to rely, in preference, on the uncertain and tedious action of the acetum lyttæ. Mr. Lane believes that union by first intention is obtainable in them, by proper management, with nearly as great certainty as in vesico-vaginal or recto-vaginal fistula.

The following case, which was under Mr. Lane's care ten years since, will illustrate this. A boy, eight years old, was admitted into St. Mary's Hospital with a fistulous opening about a third of an inch long, in the urethra, just in front of the scrotum. It was the result of an incision which had been made a year previously for the extraction of an impacted calculus. Mr. Lane introduced a grooved staff into the bladder, and cut down upon the urethra in the perineum. Through the opening thus made he passed an elastic catheter, and tied it in the bladder. He then denuded the edges of the fistula freely, and inserted a sufficient number of silver wire sutures. A splint of thin sheet-lead, with holes in it for the sutures to pass through, was placed over the wound, and the ends of the sutures were fastened with perforated shot outside the splint, after Bozeman's method. The leaden plate and the sutures were left in position till the ninth day; on their removal, it was found that complete union by adhesion had taken place throughout. The catheter in the perineum was therefore discontinued, and the perineal wound healed favourably by granulation, the urine gradually resuming its passage by the natural channel.

Bozeman's leaden plate, which has been discarded by most surgeons as an unnecessary complication in operations for vesico-vaginal fistula, has a very useful application in cases of this kind—in which, indeed, Mr. Lane believes it to be almost essential to success. It is, he writes, of service partly by affording a steady and gentle support to the parts on each side of the line of union, but more especially by keeping the wound gently and uniformly on the stretch in the longitudinal direction throughout the treatment; the main cause of failure when sutures only are used being the shortening and doubling up of the wound, which results from the penis falling down upon the scrotum, and the consequent gaping of the edges in the intervals between the sutures. A full-sized bougie should be placed in the urethra while the sutures are being inserted, to guard against the risk of causing a narrowing of the canal, but it need not, of course, be retained after the operation is completed. Two or three grains of camphor with opium should be given night and morning to prevent erections, and cold lotions should be freely applied for the same purpose. The risk of disturbance of the wound when erection takes place is greatly diminished by the use of the leaden plate.

Art. 193.—*Lithotomy and Lithotrity.*

By Gurdon Buck, M.D., Visiting Surgeon to the New York Hospital.

(*Lithotomy and Lithotrity;* 8vo, pp. 59. New York. 1872.)

This pamphlet gives the histories of fifty patients treated by Dr. Buck for vesical calculus: three by lithotomy alone, five by lithotomy after the failure of lithotrity, and forty-two by lithotrity alone. Nine of the patients died, eight after lithotrity alone, and one after the employment of both methods. The following are the conclusions to which the author's experience has led him with regard to the choice of operation:—

"1. For patients under seventeen years of age, lithotomy should be preferred. . . . The only exception admissible to this rule might be a case not under ten years of age, in which a stone was ascertained, by measurement with a lithotrite, not to exceed one-half to three-fourths of an inch in diameter; and which might therefore very probably be gotten rid of by a single operation.

"2. For adults, lithotrity is most advantageously employed when the patient's condition is such as existed in the cases comprised in Groups I. and II. of this pamphlet, to wit: A moderate size calculus co-existing with a favourable condition of the urinary organs and general system; also where a like favourable condition of the local organs and general system co-exists with a calculus of large size but not of hard consistency.

"3. If a calculus be found by the lithotrite to be very hard, and to measure one inch or more in diameter, though at the same time other favourable conditions may co-exist, lithotomy should be preferred, as affording the patient the best chance of a good result.

"4. Great difficulty in passing the neck of the bladder with the lithotrite, whether from the enlargement of the prostate or from a fixed position of the stone itself, should deter from the employment of lithotrity.

"5. In a debilitated or reduced state of the system from purulent cystitis and protracted suffering, irrespective of the size of the stone, lithotomy should be preferred. Emptying the bladder instantaneously of its foreign contents, and putting it at rest by draining off the urinary secretion, will afford the patient in such a condition the best chance to rally and recover.

"6. In a case of stricture of the urethra, its complete cure should be a preliminary step to the employment of lithotrity."

Art. 194.—*Lithotrity in Children.*

By H. Guersant, M.D.

(*New York Medical Record*, Oct. 1.)

Dr. Guersant remarks that his own experience and of all those who have performed this operation is favourable to the employment at all

ages, even in children fifteen or eighteen months old, without regard to sex. Lithotrity is always applicable to the youngest children when—First, the calculus is of but small size, being not more than three-fifths to two-thirds of an inch in diameter, and the surgeon is enabled to operate several times—three times at the most. Second, when the general health is good, and the bladder appears to be in good condition and exempt from purulent catarrh. Third, when, above all, there are not more than one or two calculi. Lithotrity is, on the contrary, inapplicable—First, when the calculus is too large (three-quarters of an inch or more). Second, when it is adherent. Third, when it is very hard and mulberry-shaped.

Art. 195.—*Primary Cancer of the Bladder.*

By John Ashhurst, Jun., M.D.

(*Philadelphia Medical Times.*)

Dr. Ashhurst relates a case of primary cancer of the bladder; the patient being an Irishman, forty-five years of age, and by occupation an engineer. Apart from the rarity of cancer of the bladder occurring as a primary affection, the case presented the subjoined clinical and pathological features of interest.

1st. The absence of pain during the latter stages of the affection, and the entire freedom from hæmaturia, both unusual, were explained by the fact, revealed at the post-mortem examination, that there was no ulceration of the mucous surface of the bladder.

2nd. The rapid development and great intensity of the so-called "cancerous cachexia," in connexion with the occurrence of pulmonary disease, which was not cancerous, were of interest—illustrating the fact that this cachexia depended rather upon the implication of vital organs than upon the extent and duration of cancer as a special form of new growth; the "cancerous cachexia" is not particularly well marked in cases of uncomplicated cancer of the bladder.

3rd. The rapid course of the affection, and its early termination in death before the vesical growth had advanced to the stage of ulceration, were evidently owing to the condition of the lungs—the fatal issue being in fact due to pulmonary disease, and not to vesical cancer.

Art. 196.—*On Puncture of the Bladder.*

By J. Watelet, M.D.

The following are the conclusions arrived at in a pamphlet by Dr. Watelet, on *Puncture of the Bladder with the aid of a Capillary Trocar and "Pneumatic Aspirator:"*—

1. The puncture with the capillary trocar is an operation absolutely devoid of danger.

2. It should, in all cases, be used instead of ordinary hypogastric puncture.

3. Besides—and this is most important—it can be done three or four times a day, and thus can take the place of the catheter in cases where it cannot be passed.

Art. 197.—*On the Treatment of Hæmorrhoids in Pregnant and Puerperal Women.*

By Fordyce Barker, M.D.

(*Medical Times and Gazette,* July 6.)

We transcribe from the *Boston Journal* the principal points of an interesting paper by Dr. Fordyce Barker, "On the Treatment of Hæmorrhoids in Pregnant and Puerperal Women."

As the pressure exerted by the gravid uterus upon the rectum, retarding the return of blood from the hæmorrhoidal plexus of veins to the inferior mesenterics, exists in every pregnant woman, some other agent must also contribute to the production of hæmorrhoids in those women in whom they occur. This may be either constipation or diarrhœa. In constipation there is probably the same atony of the coats of the hæmorrhoidal veins as exists in the muscular coat of the rectum, and the pressure of accumulated fæcal matter contributes to make these veins varicose, and, if long continued, to develop hæmorrhoidal tumours. The effect of a purgative is to stimulate an abnormal peristaltic action in directly an opposite direction to the returning blood. Some who are subject to piles are never constipated, but have habitually a loose, relaxed condition of bowels, the same atony of the venous coats resulting from the irritation and exhaustion of diarrhœa as exists in constipation. If the hæmorrhoidal veins have become varicose during the latter periods of gestation, the tumours may be developed by the long pressure of the fœtal head on the rectum during labour. The hæmorrhoidal veins sometimes swell enormously at this period, as they are probably weakened by the distension they have suffered during labour, and they regain the power of contracting with great difficulty. In many patients the hæmorrhoids are first developed by the action of the purgative given two or three days after confinement.

The indications in treating hæmorrhoids are to counteract the constipation or diarrhœa, and to stimulate and restore the tonicity of the hæmorrhoidal veins; and for effecting this combined purpose, Dr. Barker believes that aloes is the remedy most to be relied upon. He has now for many years past constantly made use of it, with the best results, in treating the hæmorrhoids of pregnancy, whether these had been the result of constipation or diarrhœa. He prescribes a combination with other agents according to the exigencies of the cases, and in such doses as, from observation of the individual, he finds necessary to secure one easy, free, daily evacuation of the rectum. Some require a grain morning and evening, while for others half this suffices. In the ænamic it is combined with sulphate of iron; and, during the last two weeks of gestation, belladonna is always combined with it. The following formula has frequently been employed:—Pulv. aloes soc., sapo. cast., āā ℈j, ext. hyoscy. ʒss, pulv. ipecac. gr. v. This is made into

twenty silvered pills, of which one is taken morning and evening. When there is anæmia a scruple of sulphate of iron is added. About ten days or a fortnight before the expected labour, from ten to twenty grains of extract of belladonna are substituted for the hyoscyamus. When there is an irritable rectum, with frequent small, teasing thin evacuations, opium should be substituted for hyoscyamus, and a less quantity of aloes given, as in this formula:—Pulv. aloes, ext. opii aquos., sapo. cast., āā gr. x, in pil. xx.

When large hæmorrhoidal tumours present themselves during labour, Dr. Barker treats them by forcible dilatation. After the delivery of the child, and before the removal of the placenta, the patient being fully under chloroform, he pushes back the tumours within the sphincter, if this can be done readily. If it cannot he leaves them there, and introducing both thumbs, back to back, well into the sphincter, he opens them as wide as possible, and draws them through the sphincter. During this time firm pressure on the uterus is made by an assistant; and in several instances the operation has been followed by sudden expulsion of the vagina. The following ointment is directed to be applied twice a day to the tumours and well up into the rectum:—Ung. gallæ c. ʒj, ext. opii aq. ℈j sol. ferri persulph. ʒj. The tumours gradually disappear, and the patients suffer very little from the operation.

When hæmorrhoids come on after labour, they give rise generally to much more suffering than during pregnancy. They are often induced by the action of a purgative, and Dr. Barker became convinced long since that castor oil, wherever there is any tendency to piles, is one of the worst agents that can be used. To those who have hæmorrhoids, or are predisposed to them, he prescribes—Magnes. sulph., magnes. carbon., pot. supertart., sulph. sublim., āā, one, two, or three teaspoonfuls in the morning fasting. This produces a soft evacuation without pain, even when the hæmorrhoids are inflamed; and by procuring a daily evacuation, and using the ointment before named, the hæmorrhoids of puerperal women are soon removed.

Art. 198.—*On Plugging the Rectum.*

By William Allingham, F.R.C.S., Surgeon to St. Mark's Hospital for Fistula.

(*Diseases of the Rectum.* London. 1871.)

Mr. Allingham, in his excellent work on *Diseases of the Rectum*, recommends the following procedure, if secondary bleeding occurs after an operation for piles. When called to a case of hæmorrhage, always arm yourself with a full-sized, bell-shaped sponge, and plenty of cotton wadding. Take also some persulphate of iron or powdered alum. Thread a strong silk ligature through near the apex of your cone-shaped sponge, and bring it back again, so that the apex of the sponge is held in a loop of the thread. Then wet the sponge, squeeze it dry, and powder it well, filling up the lacunæ with the iron or alum. Pass the forefinger of the left hand into the bowel, and, upon that as a guide, push up the sponge, apex first, by means of a metal rod, bougie, pen-

holder, or a rounded piece of wood, if nothing better is at hand. The sponge should be carried up the bowel at least five inches, the double thread hanging outside the anus. When this is so placed, fill up the whole of the rectum below the sponge thoroughly and carefully with cotton-wool well powdered with the alum or iron. When the bowel is completely stuffed, take hold of the silk ligature attached to the sponge, and while with one hand you pull *down* the sponge, with the other hand push *up* the wool. This joint action will spread out the bell-shaped sponge, like opening an umbrella, and bring the wool compactly together. The plug should remain in at least a week, and it may be retained a fortnight or more.

Art. 199.—*Iliac Abscess.*

By J. Fayrer, M.D., C.S.I., Hon. Physician to the Queen.

(*Medical Times and Gazette,* August 24.)

The pathology of these iliac abscesses is simple enough—a collection of pus under the iliac fascia, either on, in, or beneath the iliac muscle. The causes, however, are not always so apparent, but they seem to be referable to either fever (when no doubt they are the result of capillary embolism due to the hyperinotic condition of the blood) or to other such causes as induce suppuration in septicæmic states; to external violence, strains, or over-exertion; to sudden and perhaps inordinate muscular efforts, in which a muscular fibre, being wrenched from its attachment, tears away a fragment of periosteum, and thus induces superficial necrosis and suppuration in that area, which becomes the nucleus of the abscess. Dr. Fayrer has never detected any loose bone in these cases, but the fragment may have been so minute as to escape detection, or, indeed, the suppurative action may have been a result of the disruption of a small portion of periosteum without any exfoliation or death of bone; or it may well be that a combination of these conditions may be the cause in certain cases, occurring in persons who are afflicted by a malarious state of climate. The treatment is simple, though it is heroic. Exit must be given to the deep-seated matter, or it will find its own way out either through the intestines, the bladder, or the groin, or through the loins, causing caries and all the consequent dangers and suffering; or it may enter the peritoneum and rapidly destroy life by peritonitis—if, indeed, blood poisoning from septic absorption do not terminate life before these events can occur. The earlier, therefore, that an opening be made, the better are the patient's chances of recovery.

The depth at which the pus is situated, and the nature and position of the superjacent structures, render it impossible that marked pointing should indicate its presence. In the earlier stages—the period which should not be allowed to pass without interference—a certain tension, hardness, and fulness of the iliac regions takes its place. This, in conjunction with the history, the presence of fever (not always preceded by well-marked rigors, but sometimes by symptoms that simulate low forms of slight remittent malarious fever), pain of a constant and wear-

ing character, with contraction of the thigh upon or towards the abdomen (in the commencement but slightly so), the general appearance of suffering all this entails, and added, that peculiar feeling communicated to the educated finger only, of pus lying deeply seated under tissues and a certain amount of œdema of the surface, proclaim the necessity of immediate surgical interference, and Dr. Fayrer knows of no case in which it gives greater or more signal relief. As to the operation, for its completion, an incision through the abdominal wall dividing integument, aponeurosis of external oblique, and internal oblique, and transversalis muscles, must be carefully made. The transversalis fascia being carefully divided, and the peritoneum, which is generally thickened, pushed aside, the finger being gently and carefully introduced, the iliac fascia is scratched through with the point of the finger or with a director, and the pus is reached either immediately under the fascia, in the substance of the muscle, or on the bone. The subsequent treatment is that of any other abscess that has been opened.

Dr. Fayrer adds that he has found the use of carbolic acid of service in diminishing suppuration, and favouring the granulation and cicatrization of the cavity.

(c) CONCERNING THE UPPER EXTREMITY.

ART. 200.—*Modified Pistol Splints for the Treatment of Colles's Fracture.*

By P. J. HAYES, M.D., Surgeon to the Mater Misericordiæ Hospital.

(*Dublin Journal of Medical Science*, November.)

Surgical ingenuity has been taxed in providing a variety of means for treating fracture of the lower extremity of the radius, yet Dr. Hayes ventures to offer an addition to the already lengthy list. The apparatus he has devised consists of a pair of pistol splints, one of which being longer than the other, is for application on the dorsal or extensor aspect of the forearm, and is divided in an almost transverse direction at a point which, when the splint is applied, would correspond to the radius immediately above the wrist-joint; a hinge, fastened along the ulnar border of the splint secures, what he calls, the hand portion to the forearm portion, and by means of a screw, the hand portion can be pronated considerably.

The palmar or shorter splint also possesses a hand portion hinged to a forearm portion; the line of division between them is, however, much more oblique (from the radial edge downwards and inwards) than that in the dorsal splint, so that the lower end of the forearm piece would, when *in situ*, reach a point about two inches above the inferior extremity of the radius; the hand portion of this splint can also be caused to undergo pronation by the movement of a screw. In Colles's fracture there is usually more or less supination and abduction of the hand, consequent upon displacement of the lower fragment of the radius, and in

order to correct such, and, at the same time, bring the fractured surfaces into fair apposition, the splints Dr. Hayes has described are to be carefully padded, adjusted, and strapped upon the forearm and hand, then by simultaneous movement of both screws, pronation and abduction of the hand can be effected either rapidly or gradually as the surgeon may desire.

The splints are so constructed as to be applicable for either forearm, and need not be kept on the limb for a period longer than a fortnight after the fracture, as some union will have taken place by that time, and then a simpler means for giving support and protection may be substituted.

Art. 201.—*Compound Fracture of Radius and Ulna; Wound Sealed by Carbolized Collodion.*

Reported by J. H. Raymond, M.D., late House-Surgeon Brooklyn City Hospital.

(*New York Medical Journal*, May.)

J. F., aged fifteen years, a labourer by occupation, was received into the hospital on the 25th of November, 1871, suffering from a compound fracture of both bones of the left forearm at a point about two inches from the end of the olecranon. The upper fragment of the ulna was protruding through the wound, which was on the anterior surface of the forearm. The fracture was reduced, and the wound closed by a piece of surgical lint thoroughly soaked in carbolized collodion; the forearm was put on a straight splint. After three weeks the sealing was removed, and the wound found entirely healed; there was excellent union. On the 11th of January the patient was discharged with a good arm, the case having pursued the course of a simple fracture.

Art. 202.—*On Sub-Periosteal Resection of the Elbow.**

By M. Ollier.

(*Gazette Hebdomadaire*, No. 19, 1872.)

Sub-periosteal resection of the elbow-joint, which gives in cases of chronic suppurative arthritis results so superior to those obtained by the old method, presents the same advantages in cases of comminuted fracture of the elbow produced by gunshot wounds. Whatever be the disorder produced by the ball, so long as resection is indicated, it is necessary to perform it according to the sub-periosteal method, and, notwithstanding a multiplicity of splinters, one may apply to this operation the fundamental rules of the method. Notwithstanding the splintering of bone and laceration of periosteum, one may preserve a periosteo-capsular sheath sufficient for supplying the elements of a new joint.

M. Ollier utilizes the openings formed by the projectile if these be

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* Communicated to the Société de Chirurgie of Paris.

found in the course of the incision which he has described for resection of the elbow. In contrary cases he makes a fresh incision, carried at first along the external edge of the humerus, and then obliquely from the epicondyle to the olecranon, to terminate at the external border of the ulna; the articulation having been opened, the operator seizes with forceps the different splinters, and removes from them their fibrous investment. Finally the ends of the bones are explored, denuded of periosteum, and then sawn off.

With M. Ollier a sub-periosteal operation does not consist in more or less regular scraping of the extremities of the bones, and in the conservation of some flaps of periosteum; it is a regular operation which has for its aim the conservation of all the elements of mobility and persistence of the future articulation. He does not pass his knife behind the periosteal sheath, and does not penetrate into the muscular spaces; no muscular insertion is compromised, and by the conservation of the periosteum he obtains the development of osseous masses which in articulating together assure the reconstruction of a new joint of the same type as the joint removed.

Of eight resections of the elbow made by M. Ollier in the late war, in one the upper limb was amputated three days afterwards by a surgeon who was not aware that an operation had been performed; one patient died from hæmorrhage eighteen days after the resection, the ball, which had fractured the joint, having wounded the brachial artery; when M. Ollier saw this patient, thirty-six hours after the accident, the radial pulse was re-established, there was no hæmorrhage, and a wound of the artery was not suspected. In the six other cases, three patients were submitted for too long a time to immobility of the arm. M. Ollier found that there was almost complete anchylosis. The three last patients could perform energetic movements of flexion and extension. The consecutive treatment after resection of the elbow is of great importance. It is necessary to keep the limb immovable only during the stage of fever and of inflammation; a silicated bandage well padded, and perforated over the wound, constitutes the last apparatus.

Of these eight operations, some consisted in complete resection, others in resection of but a part of the articular surfaces. He approves of *semi-articular* resections, which remove the totality of one of the articular surfaces, but he rejects *partial resections*, which remove a part of one or the other articular surface, and favour the confinement and retention of pus.

Art. 203.—*The Movement Plan in Elbow-Joint Fractures.*

By W. F. Peck, M.D.

(*Atlanta Medical and Surgical Journal*, July.)

Dr. Peck reports three cases of fractures and contusions of the elbow-joint, to illustrate the benefits of an occasional judicious passive movement for the prevention of anchylosis. In accepting the views of Cohnheim, Recklinghausen, and Simon upon inflammation, the value, or rather the explanation made as a cause of the beneficial results of the

treatment recommended, he says, is seen in the pathological operations of the *leucocyte*, which undeniably possesses an independent life, and which plays an important part both in reparative and destructive inflammation. When proper movement of the joint is practised, he states with much boldness that stasis, ending in semi-organization of matter or suppurative inflammation, is much less liable to occur.

Art. 204.—*Ununited Fracture of the Humerus Successfully Treated by Resection.*

Under the care of Professor Spence, at the Edinburgh Royal Infirmary.

(*Medical Times and Gazette*, June 22.)

"James W., aged 40, labourer, admitted into the Royal Infirmary March 7, 1871, suffering from an ununited fracture of the humerus. The original injury was sustained twelve weeks before admission, from a fall upon the ice. The limb was set, but never united. Patient is a healthy-looking man, but of rather intemperate habits.

"March 21.—To-day Mr. Spence made an incision, three inches in length, over the seat of fracture, exposed the ends of the bone, and, without removing them from their bed of soft parts, cut off with the bone-pliers the rounded extremities of the bones. The arm was then put up in rectangular splints. It need only be remarked further, that the wound healed well, without a single bad sympton supervening. The discharge was never copious, and the bone showed a great tendency to unite from the first.

"On May 9, wound almost healed; bone quite firm; patient gets up every day.

"A few days subsequently he was sent to the Convalescent House, with the splint still applied, instructions being given him to make passive movement of fingers and wrist-joint. After being at the Convalescent House he returned to show himself. The bone was firmly united; the thickening considerable. He feels it quite strong, but the movements of the elbow are not yet free.

"He was dismissed, but strictly enjoined to continue passive motion and the use of the warm douche, as he had been doing whilst in the hospital.

"*Remarks.*—The foregoing case affords a favourable example of the good results of a method or modification of resection in cases of ununited fracture, which I first practised in a case of false joint of the humerus in 1854, which was published in the *Edinburgh Medical Journal* for that year. In regard to that case I remarked :—'In deciding on resection of the ends of the fractured bone, I determined to remove no more than the rounded and atrophied ends, and to do so with as little disturbance of the surrounding parts as possible. . . . Having often observed in cases which had come under my notice, in which resection had failed, that fully two inches, or even more, had been removed, it always seemed to me that not only the amount of bone thus removed, but also

the great denudation required to effect its removal, might account for the failure, besides increasing the risk of severe constitutional disturbance.' The principle of this method of resection is one in which I have great confidence; and considerable experience in performing it since 1854 has confirmed me in the opinion I then formed."

ART. 205.—*Necrosis of the Upper End of the Humerus following Amputation of the Arm for Injury; Removal of the Dead Bone.*

Under the care of Mr. WOOD, at King's College Hospital.

(*Medical Times and Gazette*, October 19.)

The patient was a lad, about thirteen years of age, who had met with a machine accident in August last, which caused a severe compound fracture of the humerus necessitating primary amputation about the juncture of the upper and middle thirds. He recovered well from the operation, but one or two sinuses were left at the inner side of the cicatrix, along which a probe could be passed down to dead bone. Mr. Wood therefore made an incision through these, and after detaching the soft parts with the scalpel he was enabled to withdraw a piece of bone nearly two inches in length, and representing the whole thickness of the shaft.

In his remarks upon the case Mr. Wood observes that it was not at all an uncommon thing to get necrosis following an amputation for a machine accident. In such cases, as in gunshot accidents, the bone is often cracked or fissured some distance higher than the point sawn through in the operation, and when this happens the injured parts almost invariably necrose.

Before commencing the operation he had thought it not at all unlikely that the head of the bone, and consequently the joint, might be affected, but, though the necrosed portion extended to the upper end of the shaft, it had separated at the epiphysial cartilage so as to leave the joint intact. A good deal of new bone had been thrown out around the upper end of the dead portion, which felt very rough to the finger. Tactile sensation is not accurate enough to be relied upon to distinguish new-formed and growing bone from dead bone, and a good plan, when there is any doubt, is to snip off a small fragment with the bone-nippers for inspection. This was done, and the fragment was seen to be healthy and growing by the presence of cartilage at its base. Some of this growing bone was, however, removed, as it was found spreading out towards the position of the brachial artery and brachial plexus, and Mr. Wood thought it a wise precaution to remove all that was likely to excite inflammation or irritation of these structures.

Art. 206.—*On Periarthritis.*

By M. Simon Duplay, of the Hôpital de la Pitié, Paris.

(*Gazette Médicale de Paris*, No. 37, 1872.)

M. Duplay gives the case of a man aged seventy years, who had suffered from periarthritis, a very common though previously undescribed affection. The patient had received a contusion of the right shoulder, and the pain caused by the injury compelled him to lay up. At a later period he found that he could not move the arm without difficulty, and that a crackling sound was occasionally to be heard in the joint.

It should be stated before proceeding further, that when the shoulder-joint is healthy, the scapula rests immovable when the arm is moved horizontally, and when one impresses on the head of the humerus movements of semi-rotation parallel to the long axis of the body.

In this patient there was nothing of the kind: the right hand could be applied to the head only slowly, and with difficulty, and the scapula was moved with it. When the scapula was fixed, the arm could not be carried beyond the horizontal position. With forcible abduction the hand which confined the scapula could feel this bone slip from below it, and the resistance was overcome. Rotation was almost impossible. The seat of the crepitation could not be well determined. The patient when asked to indicate the seat of pain, traced with perfect exactness the course of the circumflex nerve. During the movements of supination and of extension of the forearm on the arm, he suffered pain over the coracoid process. There was no deformity in the region of the shoulder.

What does this history signify? The case was one of periarthritis. M. Jarjavay has described inflammation of the articular serous pouch succeeding a contusion, but the description and the treatment were restricted to the acute period. An autopsy made by M. Duplay has enabled him to trace out a precise history of this affection.

A man who suffered from manifest periarthritis came under the care of M. Duplay, who broke down the adhesions. The patient shortly afterwards died in the hospital from pulmonary congestion.

The deltoid muscle was slightly atrophied, and of a pale colour; the abundant cellular tissue which surrounds the muscle, and which plays the part of a serous sac between its deep surface and the external aspect of the humerus, was transformed into a series of fibrous cords, which were stretched and distended on movement of the arm. The acromio-coracoid sac was traversed in all directions internally by cellular bands; and finally a similar fibrous tissue enveloped the ulnar and internal cutaneous nerves. This explained the sensations which had been experienced by the patient along the course of these nerves.

In this, as in the great majority of cases, the starting-point of the affection had been an injury. In fourteen out of fifteen cases the patients had fallen upon the shoulder.

In one case of periarthritis the immobility of the arm followed an attack of phlegmon.

The symptoms of the affection are impeded movement, crackling in the joint, and pain. In some cases there is deformity due to muscular atrophy.

It may be readily conceived to what errors in diagnosis one may be exposed if the precaution be not taken to strip the patient. It is indispensable to make a comparative examination of both arms, and to put them through all their movements. There is no doubt that mistakes have frequently been committed in the diagnosis of this affection.

There is but one plan of treatment; this is barbarous, but sure. The patient having been placed under the influence of chloroform, the adhesions should be ruptured by moving the arm in all directions. The crackling sound will then be very evident. When once heard it will be found that this expression is not an exaggerated one. On the second day the patient will be able to perform all the movements of the arm. The limb, however, should at first be used with moderation, and the surgeon will act prudently in directing for some days the gymnastic movements of the arm.

As there is a tendency in this affection to muscular atrophy, the above treatment should be complemented by sulphur baths, shampooing, and, above all, by electricity.

Art. 207.—*Excision of the Left Scapula.*

By Samuel Logan, M.D.

(*Richmond and Louisville Medical Journal*, August.)

Dr. Logan publishes a case of excision of the left scapula subsequently to resection of the head of the humerus of the same side. He is agreeably surprised at the degree of usefulness of the extremity after such an extensive removal of bone. The patient, male, aged thirty-three years, during convalescence from small-pox, received severe blows on his shoulders, and shortly after began to suffer pain in the left scapulo-humeral joint, followed by caries of the head of the humerus and body of the scapula. Three months after the operation the wound had almost entirely healed, with the following use of the limb:—He could lift readily any moderately heavy article; could pull perpendicularly (lifting) 26 pounds, horizontally, 26½ pounds; by simply flexing the forearm (and not lifting with the body) he could raise 14 pounds; could place his hand on either ear or shoulder, but not on back of the neck, and pass his hand over the whole of his forehead and face; he could not carry his hand behind his back, but could readily bring it so as to sweep over the whole chest and face. The cavity left by the operation was filled almost to the level of the surrounding parts with a somewhat hard mass of new deposit.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 208.—*On Functional Impotence of the Peroneus Longus.*

By Dr. DUCHENNE, of Boulogne.

(*Archives Générales de Médecine*, Juillet, 1872.)

"1. There exists a kind of talipes valgus which is occasioned by fatigue from walking or by prolonged standing, and appears only during the exercise of these functions, in a similar manner, for example, as functional spasm of the hand, writer's cramp. This affection I have called *functional valgus*.

"2. In cases of this kind the peroneus longus, rendered powerless by fatigue, by standing or by walking, can no longer depress the sub-metatarsal prominence (anterior heel) with sufficient force to support the weight of the body. The foot then is applied firmly to the ground only at its external border, and becomes distorted at the calcaneo-astragaloid articulation so as to form a flat-foot valgus.

"3. Functional flat-foot valgus from impotence of the peroneus longus is primarily painless, but shortly afterwards in the second stage the abnormal pressure of the surfaces of the calcaneo-astragaloid articulation excites pain and consecutively reflex contractions of some of the muscles which act on the bones forming this articulation (usually the common extensor of the toes and the peroneus brevis). These contractions disappear with rest.

"4. When the reflex contractions extend to the peroneus longus the flat-foot is converted into a hollow-foot valgus, although this muscle remains impotent during walking and standing. The hollow-foot valgus is apparent only when the foot rests on the ground, for in walking the foot again becomes flat in consequence of the impotence of the peroneus muscle.

"5. Functional flat-foot valgus can, in most cases, be rapidly and easily cured by localized faradization of the peroneus longus. Functional hollow-foot valgus opposes more resistance to this mode of treatment, which, however, seems to me to be the best.

"In some cases of rebellious functional valgus, section of the peronei has given apparently good results.

"6. Adhesion of the peroneal tendons in their fibrous sheath after tenotomy annuls their mutual independence, and the depressing action of the peroneus longus on the first metatarsal bone.

"7. Section of these tendons in their fibrous sheath behind and above the external malleolus, in the treatment of flat-foot valgus from functional impotence of the peroneus longus, aggravates this kind of deformity, by rendering it permanent, and quite or almost incurable by localized faradization of the peroneus longus.

"8. Section of the peroneus brevis ought to be practised near its attachment to the fifth metatarsal bone, and that of the peroneus longus above the fibrous sheath.

"9. Notwithstanding the reduction of the valgus by tenotomy, or

by mechanical means, the disorders occasioned by functional paralysis of the peroneus longus still persist.

"10. Notwithstanding most marked valgus kept up by muscular contractions, the pains and disorders produced by functional impotence cease as soon as this muscular impotence has been cured by localized faradization."

Art. 209.—*Popliteal Aneurism Cured by Flexion.*

Under the care of Dr. W. H. Stephenson, at the Blackburn and East Lancashire Infirmary.

(*The Lancet*, June 22.)

The notes of the following case of successfully treated aneurism of the popliteal artery have been forwarded to us by Dr. John Maunsell, house-surgeon :—

George P——, aged thirty-four, a labouring man, of healthy appearance and sanguine temperament, was admitted into the infirmary March 30th, 1872, with a pulsating tumour in the popliteal region. Nine years ago he had an attack of acute rheumatism. Does not remember having received a blow or other injury to the leg. The first symptoms commenced about two months ago, in January, when he experienced great pain in walking, with a peculiar numb and dragging sensation in the calf of the leg, "as if the leaders were affected." The pain was particularly severe at night, and greatly increased by rainy weather. No tumour or pulsation attracted his attention, and, applying for medical advice, he was treated for rheumatism. He continued to follow his occupation for a month; after this the pain became so constant and unbearable that he was obliged to give up work; he then noticed the tumour, but did not seek admission to hospital until another month had elapsed.

On admission the man had a haggard and careworn expression, due to the constant suffering; otherwise his general health seemed to be unaffected. In bed he lay with the affected leg, the right, upon its outer side, and flexed upon the thigh at an angle of about 20°. He said that this was the easiest position, and that he had been unable for more than a month to keep it in any other. The right knee-joint was swollen, and the veins over it were very prominent. In the popliteal region there was a tumour, the pulsations of which were plainly perceptible even to the eye. It was somewhat larger than a hen's egg, occupying the whole space, and extending downwards; the pulsation was of the usual distensile character, synchronous with the heart's beat, stopping when pressure was applied to the femoral of the same side, and accompanied by a distinct bruit. There was nothing abnormal discovered with the heart or any of the other vessels.

It was determined to treat the aneurism by flexion. On April 3rd the method was put in practice. The leg was first bandaged from the foot upwards to just below the tumour; the limb was then flexed upon the thigh as much as possible—until, in fact, the heel was in close proximity to the buttocks—and freely retained there by a figure-of-8 bandage

between the leg and thigh. Great pain was complained of, and to relieve this hypodermic injections of morphia were given. The patient was told to keep perfectly quiet, and was put upon milk diet. The limb was retained in this position for forty-eight hours; examination at that time disclosing the fact that pulsation had entirely ceased, the bandage was removed, and the leg was wrapped in cotton-wool and laid on the outer side, the flexed position being still maintained as much as possible.

From this date everything progressed favourably; the report on April 15th, the eleventh day after, stated that the uneasy sensations of heat, tingling, pricking, &c., always supervening in such cases, had almost passed away; that there was no pulsation in the tumour, the swelling of the knee was greatly diminished, and the expression of the countenance much improved. On April 21st he was allowed to get out of bed; he was then able to walk with a crutch, though considerable thickening remained in the region of the tumour. The patient was kept in hospital a month longer, until May 20th, when he was able to move his knee with more freedom than on admission, and could walk some considerable distance with the aid of a stick, and without any pain. He was seen on June 10th; the thickening had almost disappeared, and he was in every way progressing satisfactorily.

Art. 210.—*Dislocation of the Patella on its Edge.**

By Geo. Southam, F.R.C.S., Manchester.

(*Medical Times and Gazette*, Aug. 24.)

This accident occurred in a gentleman, aged twenty-two, in good health, and with well-developed muscles, whilst wrestling with some companions in a first-class railway-carriage. The patella was in a vertical position, the outer edge resting on the outer side of the external condyle of the femur, the inner forming a sharp projection at the front of the knee. The skin over it was so tense that the bone seemed as if it would force itself through the integuments if pressure were applied to it. The pain was most excruciating. Chloroform was administered, and the leg raised to relax the extensor muscles. Pressure on each side of the bone was then made, but its position could not be altered. The knee was now bent; and when the leg was at a right angle with the thigh, the bone suddenly slipped into its place. Mr. Southam believes the difficulty hitherto experienced in reducing this rare form of dislocation may be obviated by placing the patient well under the influence of chloroform before any manipulation is attempted; the pain which usually accompanies these cases forming a serious obstacle to their reduction.

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* Read before the British Medical Association.

Art. 211.—*Fracture of the Fibula.*

By W. W. Keen, M.D.

(*Philadelphia Medical Times*, August 15.)

Dr. Keen, in speaking of this fracture, from one to three or four inches above the malleolus, remarks that, so far as his experience goes, external lateral displacement of the foot is by no means so common as is taught in many text-books. In four fractures of this bone in this situation under his care in St. Mary's Hospital, and one in private practice, not one presented any displacement. When a patient presents himself with this accident, and especially if the swelling is great, it is by no means easy to make a differential diagnosis between a fracture of the lower end of the fibula and a bad sprain of the ankle-joint. He desires to recall the attention of the profession to the following sign of such fractures: In the normal condition the astragalus is mortised in between the malleoli so securely that no lateral movement of that bone is possible. When, however, a fracture of the fibula occurs above the malleolus, the ends of the fragments at the point of fracture approach the tibia, or, by grasping the leg at this point, can be made to approach the tibia, and thus the inter-malleolar space is widened. The result at once is that lateral movement of the astragalus becomes possible. In order to obtain it best, grasp the leg firmly with the left hand at the probable site of the fracture; grasp the foot with the right hand, the palm being applied to the sole, and the thumb and fingers to the astragalus itself; then bring the astragalus next the fibular or external malleolus, and endeavour suddenly to strike it against the internal malleolus, which is firm and immobile. If there be a fracture, the impact of the bones will be readily felt in most instances. One caution must be noted: the lateral movement of the tarsal bones, especially between the os calcis and the astragalus, and the os calcis and the cuboid, must not be mistaken for this lateral movement of the astragalus. The *astragalus* must be seized and moved laterally, and not the *foot* itself twisted *internally*.

Art. 212.—*On Gunshot Fractures of the Femur.*

By William MacCormac, F.R.C.S., Surgeon to St. Thomas's Hospital.

(*St. Thomas's Hospital Reports*, vol. ii. 1870.)

With regard to the treatment of gunshot fractures of the femur Mr. MacCormac says:—

"The first examination should be the only one, and must determine whether an attempt shall be made to preserve the extremity. After that, the less handling or interference of any kind the better. Stromeyer urges that our first care should be to endeavour to save the life of the patient with fracture of the thigh, and afterwards, if possible, to rectify the deformity. . . . . There can be little doubt that violent con-

tinuous extension of a bullet-smashed femur, combined with frequent handling and readjustment, must prove injurious in the extreme. Stromeyer has almost completely abandoned forcible extension and counter-extension, and prefers simply to lay the limb on the side, in the position advocated by Pott. In my own practice I employ long splints sometimes, sometimes sand-bags, with a small weight merely to steady the limb attached to the foot. In two instances that I know of subsequent deformity was successfully relieved by refracturing the bone. . . . When amputation is considered necessary in these cases, let it be done at once during the first twenty-four hours. . . . . A very interesting question is raised by Stromeyer in respect of amputations—namely, that we need not amputate clear of the diseased or injured soft tissues in ordinary cases, but may divide the bone, unless split up and inflamed, just at the seat of fracture. The track of a ball or a sinus may safely be left in the flap, and the high division of the bone, which so largely increases the risk, is thus obviated. . . . . The considerations detailed in this paper appear to me to afford ground for concluding against the universal application of amputation in regard of gunshot fractures of the shaft of the femur. Sound, though it may be delayed, union will often follow conservative treatment. I think for general guidance we may for the present declare that, in fractures of the lower half of the femur, the rule should be when in doubt to amputate, while in those of the upper half of the bone the converse should apply—namely, when in doubt to try to preserve the limb."

Art. 213.—*Excision of the Hip-joint for Morbus Coxarius.*

By T. Curtis, M.D., of Middleport, Ohio.

(*Medical and Surgical Reporter*, August 3, 1872.

Dr. Curtis publishes a case of morbus coxarius, in which life was prolonged by this operation, and believes if the patient had been seen two months earlier it would have been much better for final recovery. He warmly advocates excision after other means have had reasonable time and opportunity to arrest the disease without success, and where there are no very serious contra-indications.

Art. 214.—*A New Plan of Treating Fracture of the Neck of the Thigh-bone.*

By D. De Berdt Hovell, M.D.

(*The Lancet*, Nov. 23, 1872.)

The pain caused by the means usually adopted in order to obviate the eversion and shortening consequent on this accident may be in a great measure avoided by treating the patient on the affected side, and placing the limb in the semi-flexed position, sometimes had recourse

to in the treatment of fracture of the leg; in other words, by easily making the position of the body conform to the altered position of the limb, instead of forcibly bringing the limb into its normal relation with the body. This method was recently adopted in the case of an old lady, upwards of seventy years of age, with comfort to her and satisfaction to the author. The hip becoming a little sore, of her own accord she put two or three handfuls of flour under it into the bed; this enabled her to lie more comfortably, and in the course of a few days the muscles concerned, not having been irritated by officious surgery, quietly acquiesced in the patient being placed on her back, the knees and feet being tied together, and, a pillow having been placed under the knees, an excellent recovery ensued.

Art. 215.—*Treatment of Chilblains.*

By Mr. Fergus.

(*Canada Medical Journal*, June.)

Mr. Fergus recommends sulphurous acid in this affection. It should be applied with a camel-hair brush, or by means of a spray producer. One application of this usually effects a cure. The acid should be used pure. A good wash for hands or feet affected with chilblains is sulphurous acid, 3 parts; glycerine, 1 part; and water, 1 part. The acid will be found particularly useful in the irritating, tormenting stage of chilblains.

Art. 216.—*On Ingrowing Toe-nail.*

By Henry Finch, M.D.

(*British Medical Journal*, August 24.)

Neither of the cutting operations, Dr. Finch writes, is at all necessary for the complete and rapid cure of ingrowing toe-nail. If a small, thin, flat piece of silver plate be bent at one edge into a slight deep groove, and, after the toe has been poulticed twenty-four hours, slipped beneath the edge of the nail, so as to protect the flesh from its pressure, and the rest of the thin plate bent round the side and front of the toe, being kept in position with a small portion of resin plaster passed round the toe, a speedy and almost painless cure will take place; and the patient, after the first day, has the additional advantage of being able to walk. Dr. Finch has followed this method in numerous cases with uniform success.

Art. 217.—*Treatment of Ingrowing Toe-nail.*

By C. F. Maunder, F.R.C.S., Surgeon to the London Hospital.

(*British Medical Journal*, July 20.)

There are three cutting operations, Mr. Maunder writes, either of which can be resorted to for the relief of this disease: 1. Evulsion of

the nail, which only affords temporary relief until a new nail is produced. 2. Removal by the scalpel of the matrix with the bent nail. 3. Removal of the overlapping integument in which the side or sides of the nail are buried. This latter is the least severe method, and recovery is not protracted. The integument having been cut away freely from the side of the toe, there is no longer any material left into which the nail can be pressed, and so the disease is cured and cannot be repeated.

Art. 218.—*Ingrowing Nail.*

By Benjamin Blower, M.R.C.S.

(*British Medical Journal*, Sept 21.)

Mr. Blower desires to add a mite to the evidence repeatedly given that the removal of the nail is unnecessary.

About twenty years ago he applied a bit of compressed sponge to afford temporary relief, and was delighted to find that it effected a radical cure. He makes the sponge as solid as leather, by wetting and then winding string very tightly round it, and drying it thoroughly. Of this he cuts a small pyramidal piece, less than a grain of rice. This he inserts beneath the nail, and secures it by strips of adhesive plaster, applied longitudinally, to avoid compression. The sponge soon becomes moist and swollen, keeping the nail from the irritated flesh. Any granulations should previously be destroyed with strong nitric acid. Mr. Blower has adopted this plan upon many occasions, and has never found it to fail.

Art. 219.—*Case of Caries of the Astragalus.*

By E. M. Moore, M.D.

(*Medical and Surgical Reporter*, July 22.)

At the June meeting of the Central New York Medical Society, held in Rochester, Dr. E. M. Moore read the history of a patient, a case of chronic suppuration of the ankle-joint, which proved to be "caries of the astragalus." This was removed by crushing the bone and removing the fragments. The wound not healing perfectly, it was reopened, and the diseased end of the tibia removed. The patient then exhibited the joint, which was a good one. The deductions made by Dr. Moore were, that in similar cases, and those of compound dislocation of the ankle-joint, the removal of the astragalus would be the course which he would pursue.

Art. 220.—*On Luxation of the External Semi-lunar Cartilage.*

By M. Simon Duplay, of the Hôpital de la Pitié, Paris.

(*Gazette Médicale de Paris*, No. 39, 1872.)

The subject of this rare and curious lesion was a soldier aged twenty-seven years. Some months before admission he had a fall; the affected knee did not strike the ground, but was subjected to one of those sudden

movements which produce a sprain. A crackling noise was produced and the joint swelled.

"He was admitted into the hospital at Arras, and was treated there for three months by tincture of iodine, blisters, and the cautery. The injury had been followed by manifest inflammatory symptoms.

"The patient was discharged as cured. When a prisoner in Prussia he had another fall of a similar kind, and again heard a crackling noise in the same joint. He was treated in several hospitals, but received no benefit.

"On the patient's admission under M. Duplay the leg was straight and normal in form and external appearance. No effusion nor trace of effusion. Elevation of local temperature, which is very rarely absent in cases of chronic disease of the knee, was not discerned in this instance.

"Here there was no reason for suspecting hydrarthrosis or fungous arthritis. These affections speedily impair the movements of a joint; in this case the movements of the affected knee had been preserved.

"In moving the patella over the condyles M. Duplay could feel the friction of dry and unequal surfaces, an indication of a loose cartilage. When the leg was more than semi-flexed crackling could be felt and a foreign body protruded forward. This could not be made out by any mode of examination.

"What was the nature and origin of this body?

"Articular foreign bodies have been very felicitously named *artrophytes*. They may occur, as is well known, as accessory and normal phenomena of dry arthritis. The cartilages disappear, or are hypertrophied and become detached, and at the same time the ligaments become incrusted. In this way the foreign bodies are formed. The articular insertions of the hamstring muscles often become ossified.

"This form cannot be considered here.

"There is a second variety of artrophytes.

"They may be met with in the number of two or three in a perfectly sound joint. They may be readily dislodged. They result generally from an injury, a violent effort in which a fragment of bone is detached from an articular surface.

"In this case there was nothing of the kind.

"In the third place we have luxation of the semilunar cartilages more or less simulating the above lesions. The existence of this lesion may very reasonably be admitted here, although it cannot be absolutely asserted. It is very important to establish the diagnosis in these cases, as upon it the treatment depends.

"M. Duplay gives the following explanations :—

"1. The protrusion is invariably perceived at the superior and external part of the tibia.

"2. Foreign bodies cannot be discovered on the most minute examination.

"3. Everything leads one to conclude that an integral portion of the joint becomes displaced, and then regains its position as soon as it has passed over a grating surface.

"4. The grating surface is the femoral condyle which, together with the patella, has been altered in consequence of deforming arthritis of the first degree.

"5. The protrusion which takes place at semi-flexion of the leg cannot be anything save the semi-lunar cartilage.

"Sir A. Cooper investigated luxation of these cartilages and the mechanism of their reduction. They ought not to be mistaken, lest the surgeon should be induced to open the joint.

"M. Duplay rejected the idea of surgical interference in this case, and has not forced the knee.

"This form of arthritis invariably follows an advancing course; it is necessary, then, to allow the patient to perform those movements which the joint still possesses. Moreover, after a certain time the articular surfaces become habituated to their normal conditions. In this case M. Duplay prescribed as palliative means, a bandage to the leg, cold sulphur douches, and the internal administration of iodide of potatsium."

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 221.—*On Spurious, Feigned, and Concealed Pregnancy.*

By THOMAS MORE MADDEN, M.D.

Dr. Madden, of Dublin, in a pamphlet on the above subject, gives the histories of several interesting cases illustrating the above conditions. Under the first division, or pseudocysis, the author remarks the frequency with which we find most of the ordinary symptoms of true pregnancy counterfeited, and draws attention to the fact that the abdomen usually increases in size more rapidly than in true pregnancy. This enlargement may generally be traced to dropsical effusion into the peritoneal cavity, to the tendency to a deposit of fat in the omentum about the period of the change of life, or to accumulation in the intestines of flatus or fæcal matter. In almost every case he has noticed the patient has asserted that she could distinctly feel the movement of the fœtus; and such symptoms as "longings," alteration in tastes, irritability of temper, neuralgic pains, enlargement of breasts, turgescence and coloration of nipples, and even secretion of a lactescent fluid are not uncommonly present. However closely the symptoms of pregnancy may be simulated before the fifth month, the positive signs cannot be counterfeited after this date. Physical examination, he thinks, affords but doubtful help in the diagnosis, since the absence of sounds of placental souffle and fœtal heart is no evidence that the womb does not contain a fœtus. He is disposed to place more reliance on a manual examination of the surface of the abdomen, the muscles being relaxed, and digital exploration per vaginam.

He gives two cases in which the pregnant condition was obscured by disease; and, under the head of "Concealed Pregnancy," calls attention to the necessity of ascertaining before any operation upon the uterus is undertaken, especially before a resort is had to the uterine sound, that the organ is not gravid; it having come to his notice that women, knowing or suspecting themselves to be pregnant, have secreted the fact from the physician with the intention of throwing upon him the onus of having produced an abortion by the use of this instrument.

Art. 222.—*Contributions to the Clinical History of Affections of the Heart and Vessels in the Puerperal State.*

By Professor Hermann Lebert.

(*Archiv für Gynakologie*, iii. 1, 1871; *Schmidt's Jahrbücher*, No 4, 1872.)

In an appendix to Spiegelberg's work on the complication of the puerperal state with chronic affections of the heart, Professor Lebert remarks that chronic endocarditis with valvular defects not unfrequently occurs in girls in the second half of childhood, and more often in them than in boys of the same period of life. These affections, which generally consist in disease of the mitral valves, are developed after acute articular rheumatism and chorea, or often come on insidiously, and then sometimes without causing much disturbance. Puberty not unfrequently acts favourably on these affections, as by this condition the circulatory disturbances may be restrained; some cases, however, terminate fatally just before or soon after puberty. Congenital defect of the right side of the heart is a rare event. Professor Lebert has seen but one case; in this the cause of death was congenital stenosis of the aorta near the ductus botalli. Professor Lebert advises against marriage in cases where compensation-lesions are present, because upon these lesions the conditions of pregnancy and lying-in may act very unfavourably. Not only do the compensation-lesions come on more readily, more rapidly, and with greater intensity during pregnancy, but the valvular endocarditis, which may be developed in the second half of pregnancy, shares with puerperal endocarditis a tendency to breaking up of deposit and the formation of secondary emboli. The three following cases are reported by Professor Lebert as examples of this:—

Case I.—The patient, a pregnant woman twenty-one years of age; acute articular rheumatism in the fourth month of pregnancy; signs of mitral endocarditis; repeated attacks of shivering; symptoms of embolism in the left upper and in the right lower extremities; abortion; death from pulmonary œdema. *Autopsy.* Endocarditis with ulcerative breaking down of mitral valve, embolic plugging of the subclavian artery, the termination of the aorta, and the commencing portions of both common iliacs.

Case II.—The patient, a woman thirty-six years of age, just delivered for fourth time; child dead; in the evening strong shivering, severe puerperal fever, intense dyspnœa with abundant rhonchi and a bellows-sound over the tricuspid valve; death. *Autopsy.* Suppurative inflammation of the tricuspid valve, a large embolus in the right branch of the pulmonary artery, with suppurative inflammation of the same.

Case III.—Patient twenty-four years of age; an abortion fifteen months before; afterwards two abortions at the sixth month of pregnancy; peritonitis on the left side, at a later period left side, and then right side pleurisy, and symptoms of more profound inflammation; swelling of the right knee and left elbow-joints; death in twenty-four days. *Autopsy.* Embolism of pulmonary artery, double pleurisy, gangrene of the right lower pulmonary lobe, thrombus in the inferior vena-cava, plugging of the left renal vein, periovaritis on the left side, periuterine suppurative phlebitis, endometritis, suppurative inflammation of the right knee-joint, chronic ulcer of duodenum.

In puerperal pyæmia and septicæmia the mechanico-embolic mode of extension of process has, according to Professor Lebert, been thought too much of, whilst the inflammation of the venous walls—purulent phlebitis—has, on the other hand, been too little regarded. Multiplicity of the inflammations in the puerperal state exists not unfrequently without any evident dependence on continuity; the actual lesion may be produced through molecular detritus as well as through thrombolic and embolic infarction, to which Professor Lebert opposes a non-infecting plugging through thrombosis and embolism and their results. Professor Lebert thinks that no light will be thrown on this obscure subject before every exclusive theory has been renounced, and before one has ceased to confound under the name of puerperal fever a number of pyæmic processes which should be separated. One must by puerperal fever either understand quite generally *every* febrile process occurring in the puerperal condition, or quite specially only endocarditis with metrophlebitis and septicæmia.

Art. 223.—*On the Treatment of some Forms of Extra-Uterine Pregnancy.**

By Alfred Meadows, M.D., F.R.C.P., Obstetric Physician at St. Mary's Hospital.

(*The Lancet*, November 23, 1872.)

Relating a case of the so-called ventral variety, he referred to some remarks made by him, and published in the last volume of the Transactions, in which he advocated more frequent resort to the operation of gastrotomy in certain cases of extra-uterine gestation, the object of the operation being to anticipate, and so to avert, the almost inevitably fatal rupture of the cyst and death from hæmorrhage. In the former communication the suggestion was also made that, with a view to prevent one of the great dangers attendant upon this operation—viz., hæmorrhage—the placenta should not be removed, but should be left to undergo the slow but sure process of atrophy and absorption, it being argued that, as by the removal of the fœtus there is no longer any physiological necessity for that structure, its removal by atrophy might fairly be reckoned on. The present communication was based upon another case of so-called ventral pregnancy, which, coming under the author's care during his absence, had been seen by two of his colleagues at the Hospital for Women, Dr. Squarey and Mr. Scott, and a living child at about the seventh month was removed. The attempt, however, to remove the placenta, which was situated deep down in the pelvis, and the fœtal cyst was attended by such frightful hæmorrhage that the patient succumbed in a few hours. Dr. Meadows now contended that in all cases where the diagnosis of a living and a viable child could be made out, gastrotomy ought to be performed; and that in order to facilitate the operation, and at the same time to diminish its danger, both the placenta and the containing cyst should be left *in situ*,

* Read at a meeeting of the Obstetrical Society of London, Nov. 6.

special care being taken not to detach any portion of the placenta. In this way the operation might be reduced to a very simple process, and the chief care should be, first to extract a living child, and then to do as little damage as possible to the remaining structures, thus preventing hæmorrhage, and enabling them afterwards to undergo the process of atrophy and absorption, just as occurs in some cases where, no operation having been performed, the fœtus has died, been mummified, as it were, and finally been absorbed.

Art. 224.—*On the Secondary Signs of Pregnancy.*

By Professor C. Hennig, of Leipsic.

(*Memorabilien*, xvii. 1, 1832; *Schmidt's Jahrbücher*, No. 6, 1872.)

The less certain and secondary signs of pregnancy are of special consequence, for the reason that in the early months of pregnancy, when the signs of the first rank are absent, they are the only obtainable phenomena. These secondary signs may be divided into those that are essential and those that are non-essential; to the former belongs distension of the fœtal coverings—ballonnement, which is never absent, but which, during the early weeks of pregnancy is indistinct. In cases of extra-uterine pregnancy may be observed a simultaneous increase of the abnormal coverings of the fœtus and a sympathetic increase in size of the uterus, which progresses equally with the former until the end of the third month. With flexion or version, and also with hypertrophy of uterus, the ballonnement occurs earlier, and is more evident.

To the second division of those signs which may be absent, or which may be present, when there is no pregnancy, belong—(1) relaxation of the vaginal portion of the womb; this was absent in one-tenth of the cases registered by Professor C. Hennig, and in these exceptional instances the women had suffered from parametritis in previous confinements; (2) the transition of the os uteri from a transverse slit to an orifice of a rounded form; this frequently fails, especially in multiparæ: (3) the murmur of pregnancy, which is first heard after the third month; this murmur is not always necessarily transferred to the iliac and epigastric arteries, but in many cases to the uterus itself; (4) the bluish red or brownish red coloration of the vaginal portion of the womb and of the upper portion of the vagina; this coloration is sometimes limited to the os uteri; in hypertrophy of the pregnant womb it may be quite absent; Professor Hennig has not unfrequently observed this condition during a catamenial period in a non-pregnant woman.

According to Naegele and Luschka, after one or more labours the uterine cavity loses its triangular form and becomes oval, with which change the upper border, according to Naegele, and the lateral borders, according to Luschka, remain convex invariably. Numerous post-mortem examinations have convinced Professor Hennig that in the seventh week after delivery the cavity of the body of the womb again presents the form of that of the virgin. The coronal as well as the sagittal segment of the cavity is oval whether the woman has been

pregnant or not, when the uterus, especially in consequence of contracted or closed os uteri, contains viscid fluids or encloses a morbid growth.

Art. 225.—*Chloral Hydrate in Puerperal Convulsions.*

By E. Montgomery, M.D.

(*St. Louis Medical Journal* and *Medical Press and Circular*, October 16.)

Dr. E. Montgomery, of St. Louis, in the journal of that city, gives a very good article on the use of chloral hydrate in puerperal convulsions. We think the more highly of it in that, while adopting a new remedy, he does not throw aside all the treasured experience of the past. He sees a proper use for venesection, active purgation, and the application of cold to the head—reserving them, however, for suitable cases, and mollifying their action by the sedative effects of chloral. He prefers the chloral to chloroform, and would give it "per rectum" when it cannot be retained in the stomach. He protests against severe or forcible means being resorted to to produce labour, but would assist by the forceps or otherwise when possible with safety to the mother and child.

Art. 226.—*On the Inhalation of Chloroform in Parturition.*

By the late Sir James Y. Simpson, Bart.

(*Anæsthesia, Hospitalism &c.* Edited by Sir W. G. Simpson, Bart.)

The following is Sir James Simpson's summary of rules for the exhibition of chloroform in parturition :—

"1. Begin the inhalation of chloroform when the patient complains of much pain. This is generally towards the end of the first stage.

"2. Always inculcate perfect quietness around the patient, particularly when commencing to give the chloroform.

"3. Only give it during the pains, and withdraw it during the intervals.

"*Exceptions.*—Give a whiff of the chloroform also during the intervals when the pains are very severe and the patient awakes complaining of them. Give small doses, or only repeat them every second or third pain, when the chloroform affects the action of the heart or uterus. These cases are very rare.

"4. When given during the first stage the anæsthesia need not be deep, unless the suffering be great or the symptoms of anæsthesia disagreeable.

"5. As the second stage progresses make the anæsthesia so complete as to destroy all sensibility.

"6. Do not allow the urinary bladder to become over-distended.

"7. Do not restrain the patient in one position.

"8. Be sure to remove the chloroform as soon as the child is born.

"9. Do not awake the patient artificially."

Art. 227.—*On the Influence of Neighbouring Organs on the Position and Involution of the Puerperal Uterus.*

By Dr. Wilhelm Pfannkuch, of Marburg.

(*Archiv für Gynakologie*, iii. 1872 ; *Schmidt's Jahrbücher*, No. 7, 1872.)

1. The uterus, during the lying-in and also before the puerperal period presents generally a bending of the fundus to the right side, with rotation of the posterior border forwards: this disposition is already consummated in the fœtal condition, and is, indeed, to be referred to the first development of the pelvic viscera.

2. This disposition is favoured during extra-uterine life by the pressure of the viscera, especially of the rectum, and by the effects of gravity with right-side decubitus. This latter cause acts especially during pregnancy and the lying-in.

3. When the bladder of a lying-in woman is filled, it presses the uterus upwards and to one side.

4. This effect may be produced by a relatively small quantity of urine (about 70 cubic centimetres).

5. The separation of the fundus from the symphysis and also the angle of lateral deviation generally increase in direct proportion to the distension of the bladder. On an average 100 cubic centimetres of urine elevate the uterus by one centimetre.

6. Large quantities of urine elevate the uterus to a relatively less degree than small quantities, in consequence of the increasing lateral deviation and the less rapid increase in volume of the bladder.

7. The lateral direction of the uterus is, as a rule, to the right side, because from the first it lies more or less on the right side, forcing the bladder over towards the left side. Here gravity, according to decubitus, has great influence, and may readily reverse this relation of phenomena.

8. Distension of the rectum above the sphincter elevates the uterus, and therewith favours bending towards the right side. The chief cause, however, is always the disposition acquired through the development of the uterus, and next to this there is the influence of gravity.

9. The post-partum enlargement of the uterus is apparent, and, when there is no hæmorrhage, is caused by filling of the bladder.

10. In normal involution, the uterus diminishes continuously without any important deviations in position. Certain disturbances may affect this process of involution, and then deviations in position may occur as complications.

11. Retention of urine by itself gives rise neither to after-bleeding nor to faulty involution during the lying-in; when both these are present together the common cause generally lies in the course of the pregnancy and birth. It is at the most an occasional cause with relaxed uterus.

12. Even after the completion of involution the dependence of the uterus as to disposition of the degree of repletion of neighbouring organs may, though in a modified manner and to a slight degree, be still made out.

Art. 228.—*Pressure upon the Perinæum in Labour.*

By H. Plummer, M.D.

(*American Practitioner*, August, and the *Medical Record*, September 16.)

Dr. Plummer confesses that he is not able to see how pressure upon the perinæum in any way averts the danger of its laceration, but can understand how it may favour such an accident. The parts are already on the stretch from the descending head of the fœtus when the strain is increased upon them by pressure from without. In this way it seems to him probable many lacerations are brought about. They are said to be unknown among savage mothers. They are not often encountered in girls who, desiring to conceal their shame, give birth to their children alone and unaided. They seldom occur among the labouring classes, who for the most require and receive but little obstetrical assistance. It may be doubted whether any amount of pressure that can be safely applied against the head of the child will retard its descent; nor is he convinced that any external pressure facilitates the process of labour, except that it may turn away the head from the perinæum when impinging with dangerous force against it, and give the child the proper direction. It is often very disagreeable to the woman, and when so ought certainly not to be urged upon her. The whole process of parturition is one usually so natural that in a vast majority of cases it may be well left to the efforts of nature.

If any assistance were necessary he would prefer to rub forward the corrugated scalp, in the absence of pain, and to introduce the fingers into the rectum, assist in raising the head, and make it as far as possible hug closely the pelvic bones. When the pain subsides the head may be pushed back. By this means the pains are lengthened and the time prolonged, so that the parts may become fully dilated.

Art. 229.—*Palpation in Obstetrics.*

By James R. Chadwick, M.D.

(*Boston Medical and Surgical Journal*, August 22, 1872.)

Dr. Chadwick, writing from Vevey, Switzerland, gives the subjoined chief advantages in favour of palpation as practised in Germany: 1. That by it the period of the pregnancy may be approximately estimated. 2. That the diagnosis of the fœtal presentations and positions may be made during the later months of the pregnancy and the first stage of labour, when internal examination yields very meagre results. 3. That twins, extra-uterine pregnancy, the death of the fœtus, the size of the fœtal head, complicating tumours, and many other conditions may by it be recognised long before the vaginal examination would reveal them. 4. That the external examination may be made many times and by many persons without any risk of doing harm. On this account it recommends itself especially for purposes of instruction. *In*

the way of treatment version can be performed by external manipulation with much greater chance of success than by the internal; and with this gain *to the mother*, that the danger of inflammation and rupture of the uterine walls is reduced to a minimum; that in case of hæmorrhage or other threatening symptom turning by external manipulation may be resorted to, if thought expedient, much earlier than the old method; and *to the child*, that it thereby escapes the greater mortality attendant upon breech presentations.

Art. 230.—*Prediction of Sex in Utero.*

By T. J. Hutton, M.D., Resident Physician to Long Island College Hospital.

(*New York Medical Journal*, July.)

Dr. Hutton, in substantiating the assertion advanced by Tyler Smith and others—that not only can pregnancy, in its advanced stages, be determined by auscultation, but also the presentation, position, and sex of the fœtus *in utero*—submits the following essential points from the clinical records of seven cases as a proof of the practicability and reliability of this rule: Fœtal pulsations, heard below a horizontal line dividing the uterus into two equal parts, denote vertex presentation; above it, breech presentation; below it and to the right second position. When the fœtal pulsations number 144 per minute it is a female; 124 per minute, male. As deviations from this rule, or average, will doubtless be encountered, he ventures to add that a variation of *six beats per minute* from 124 upward or from 144 downward will not endanger a diagnosis, provided auscultation be practised in the *ninth month of pregnancy*. In his cases this rule was his sole guide, and without a single failure.

Art. 231.—*Recurrent Discharge of Fluid from the Uterus During Pregnancy.*

By D. Dyce Brown, M.D.

(*British Medical Journal*, May 25.)

Dr. Brown records an interesting case of this in a lady, pregnant about four months, who, after rather more exertion in walking than usual, was wakened in the middle of the night from a sound sleep by feeling a gush of fluid from the vagina, which, on inspection, seemed the liquor amnii just tinged with blood. After this gush there was nothing more in the way of discharge that night, and only a slight feeling of uneasiness in the uterine region. Dr. Brown kept her in bed by way of precaution, but nothing further occurred till that day week, when the same discharge returned, and in the same manner. After another week it again returned as before, and with the same reddish tinge. Before each discharge there was a feeling of fulness and distension in the uterine region, followed by a feeling of uneasiness, which soon disappeared. The movements of the

fœtus were now distinctly felt; the os uteri was slightly open. After this time the discharge came on every two, three, or four days, and increasing in quantity. When she was about five months advanced, along with the usual discharge of clear fluid, there came an alarming quantity of blood in the middle of the night. The blood likewise came in a gush; so that after what might be supposed to have lodged in the vagina had come away there was no further hemorrhage. Nothing else was felt by the patient than the usual temporary uneasiness. For the next month the watery discharge came nearly every night, in such quantities as frequently to soak a couple of towels. At the time of hemorrhage there was no alteration in the os, and no evidence of partial attachment of the placenta on the os. Exactly one month after the former hemorrhage her pulse became quick and face flushed, and Dr. Brown predicted either a return of hemorrhage or a miscarriage, but soon afterwards labour came on and she was delivered of a six months' fœtus. The amniotic sac was felt, as usual, full and tense, requiring rupture, after which a large quantity of amniotic fluid escaped. During all this time Dr. Brown kept his patient in bed. The fluid in this case could not have been amniotic, as, from its continuance and profuseness, labour must have come on sooner, while the presence of the sac entire at labour requiring to be ruptured proved it.

At the next pregnancy, at about the corresponding period of advance in gestation, the same fluid again came away in the middle of the night in a gush. Having found on the former occasion that no effect in warding off the miscarriage was produced by keeping the patient in bed Dr. Brown allowed her to rise, but requested her to keep the sofa for a week. At the end of this period the discharge occurred as before. She then rose and went about as usual, but there was no further return of the discharge, and she went safely to term. She is at present pregnant a third time, and a third time has the discharge come on at the same period of pregnancy as at first. This time the patient would not even keep the sofa for a day, and there has been no return of the discharge. This is more than four months ago. There had been no exertion or fatigue to account for the last discharge.

Art. 232.—*Rupture of Membranes during Pregnancy.*

By W. H. Campbell, M.D.

(*Boston Medical and Surgical Journal.*)

Dr. Campbell records the case of Mrs. H., aged twenty-two, who, in her second pregnancy, applied for relief from excessive vomiting. She stated that she was in her sixth month, and had vomited from the commencement, but could always retain some portion of her food till lately, and at the present time she vomited everything she ate. Dr. Campbell tried various remedies with no success; and at last, after consulting with another physician, he proceeded to induce premature delivery. On the evening of May 30th he passed a sound into the uterus and ruptured the membranes. She vomited less that night, and next morning could

retain food well. She improved from day to day, but no signs of delivery were manifested. On the afternoon of June 10th, however, twelve days after puncturing the membranes, she was delivered of a child which lived after birth about six hours. In this case the fœtus remained alive and well for twelve days after the discharge of—at least a portion of—the amniotic fluid. Another point of interest was the relief obtained, the vomiting ceasing as soon as the contents of the uterus were disturbed and before they were fully expelled, and long before the separation of the placenta.

Art. 233.—*Portion of Placenta thrown off in Pregnancy.*

By Evory Kennedy, M.D., late Master of the Dublin Lying-In Hospital.

(*British Medical Journal*, August 10.)

The following case is narrated by Dr. Kennedy: "A lady in the seventh month of her fifth pregnancy was seized with hæmorrhage, ascribed to over-exertion. There were no labour pains. On examination a portion of the placenta was found protruding through the os uteri. The hæmorrhage continued for several days, but to no serious extent; and still there was no labour. At length, fœtid grumous discharges, mixed with a little blood, occurred, attended with sense of downward pressure. The portion of placenta descended lower in the vagina; its connection with the interior of the os separated; and I removed it with very little assistance. As no increase of hæmorrhage occurred from this I thought it unnecessary to plug the vagina. The hæmorrhage and discharge ceased, and the patient went on without any inconvenience, except the precaution of keeping the horizontal position for six weeks longer, when she was delivered of a living boy apparently at or near the full time. The edge of the placenta that remained could not be felt near the os, and the portion that came away consisted of the vascular structure without the reflected membranes. There was no discharge of liquor amnii until the labour set in."

Art. 234.—*On Irregular Contraction of the Uterus.*

By Professor Trenholme.

(*Medical Times and Gazette*, August 31.)

At a meeting of the Obstetrical Society of London, July 3rd, Professor Trenholme, of Montreal, read a paper "On Irregular Contraction of the Uterus," and stated that in such cases he had found adhesions existing between the decidua and the uterine surface at term. The production of this form of contraction and its consequent results were attributed to laceration of the muscular fibres at the points of adhesion, the parts lacerated acting, during attempts at contraction, as direct excitants of the spasm of the walls of the organ. When the adhesions were near the os uteri they not only prevented its dilatation,

but also rendered the contents of the womb unable to elongate and adapt themselves to the diminished capacity of the cavity, and they neutralized the efficiency of the contraction. When the adhesions existed on one side, the vaginal pouch of waters was formed by the membranes of the opposite side, and this in its turn necessarily forced the neck of the womb to the side on which the adhesions existed. In some rare cases adhesions were found between the neck of the uterus and the vagina, which affected labour in a similar way. The treatment recommended was to pass the finger gently between the united surfaces and effect their separation. When the adhesions were beyond the reach of the finger, rupture of the membranes should be resorted to, for the purpose of allowing the child's head to glide over the decidua, since the adhesions prevented the natural passage of the membranes over the surface of the uterus. Attention was drawn to the fact that in all probability the determining cause of labour at term was due to the separation of the decidua having taken place to such an extent that the contents of the womb acted as a foreign body, and thereby induced efforts at expulsion. Hour-glass and other irregular contractions of the womb after delivery were attributed to the same cause as produced irregular contraction during the first and second stages of labour.

The President (Dr. Braxton Hicks) considered Dr. Trenholme's paper opened up a new point for clinical investigation. He had no doubt that the adhesion in retained placenta determined the position of irregular uterine contractions. But there was also a condition which was not dependent on placental adhesion. He had several times noticed in passing the hand within the uterus that the walls would be in one part hard and firm, at another relaxed and flabby; and then gradually the firm part became relaxed, while the relaxed part would become firm.

Art. 235.—*On Post-mortem Parturition.*

By James H. Aveling, M.D.

(*The Lancet*, July 27.)

At a meeting of the Obstetrical Society of London, on July 3rd, Dr. Aveling read a paper on Post-mortem Parturition. He referred to forty-four cases of the kind, and from these deduced the following conclusions: 1. Expulsion of the contents of the uterus may take place after death without the aid of art. 2. This may occur in cases in which no symptoms of natural parturition can be discovered before death. 3. Many of the manœuvres and accidents which take place in labour during life may occur in post-mortem parturition, such as expulsion of the placenta, spontaneous evolution of the fœtus, and prolapsus, inversion, and rupture of the uterus. 4. Expulsion of the uterine contents and accidents which accompany labour may be caused after death either by the contracting power, which persists in the uterus after the death of the rest of the body, or by the pressure exerted upon the uterus by gases of decomposition pent up in the abdomen. 5. Of these

causes the latter is the more frequent. 6. After the death of its mother a child may continue to live in the uterus for many hours. 7. After the death of a woman undelivered no time should be lost in removing the fœtus.

Art. 236.—*On Extra-uterine Pregnancies, and more especially of their Treatment by Gastrotomy.**

By Theodore Keller, M.D.

The following are the conclusions with which Dr. Keller ends his work :—

1. The dangers which extra-uterine pregnancy makes women encounter are so grave, that it is the duty of the physician to induce internal abortion in the first half of pregnancy.

2. This internal abortion should be effected by puncturing the ovum, but especially by capillary injection of poisonous substances.

3. When pregnancy has passed through the first half of its progress, it is reasonable to leave it to its natural course on to the term, but it is necessary carefully to watch the patient.

4. When the term of pregnancy is arrived gastrotomy should be performed and the child extracted alive. The operation should be proceeded with without delay, for fear of the results of rupture of the cyst and of the death of the fœtus.

5. When the term of pregnancy is past, and the child is dead, gastrotomy should still be the practice, to spare the mother the dangers which the presence of a dead fœtus makes her run. Before operating, delay should, if possible, be made till adhesions of the cyst and the abdominal walls have been established.

6. The diagnosis of these adhesions should be made with much care. It is upon them that depends in great part the success of the operation. The membranes and the placental insertion should be meddled with as little as possible.

7. It is not as yet possible to establish a prognostic for gastrotomy at the full time. There are cases of success. That of gastrotomy after the full term, and made at an opportune time, should not, apparently, be more grave than that of ovariotomy.

Art. 237.—*On the Elimination of the Puerperal Poison.*

By M. Hervieux.

(*Medical Times and Gazette*, November 23.)

M. Hervieux read last month at the Académie de Médecine an interesting paper upon "Elimination of the Puerperal Poison." He observed that, while there are but two channels for the introduction of

* Des Grossesses Extra-utérines, et plus spécialement de leur traitement par la Gastrotomie &c. Par Théodore Keller, Docteur en Médecine de la Faculté de Paris. Paris. 1872.

this (the uterine in a few cases and the pulmonary in the vast majority), the channels of elimination are numerous. First among these is the gastro-intestinal. Vomiting is, in fact, one of the earliest symptoms of this poisoning; and M. Hervieux has seen many cases in which all danger seemed to have disappeared after spontaneous vomiting. Diarrhœa acts in the same way, and is *solidaire* to the vomiting; so that if one of these becomes suppressed by medicinal agents the other takes its place. It is true that vomiting and diarrhœa often aggravate the patient's condition; but this only shows that the economy becomes exhausted during the immoderate efforts which it makes to deliver itself of the poison. The biliary secretion concurs also most powerfully in the eliminatory action, and especially during epidemics. During these we find patients who, after having rejected by regurgitation, without effort and almost incessantly, an inspissated bile as green as boiled spinach, present after death nearly a litre of the same matter in the stomach, intestine, and gall-bladder. Orfila established the fact that the liver is the place of refuge by predilection for mineral poisons, the organ in which they are accumulated in the largest proportions. Such accumulation of the puerperal poison has probably something to do with the fatty change of the tissue of the organ met with in lying-in women.

The lochial discharge is of scarcely less importance in this elimination. The ancients exaggerated its importance by explaining all puerperal affections by its suppression. They, in fact, mistook the effects for the cause. But that the lochia serve as a vehicle for the deleterious principle is shown by the fact that their fetidity and abundance attain proportions in some cases that neither the general nor local condition of the patient explains, and that such fetidity and abundance coincide with diminution of temperature and pulse, with an improved countenance, a return of sleep and appetite &c. The skin participates less often and less actively in the elimination, its intervention taking place especially in the severer cases, when it may be manifested either by profuse sweating or miliary eruption. M. Hervieux has had some cases in which the profuse sweats have persisted uninterruptedly for several days, and have thus conjured the most serious dangers. In these cases the secretion loses its acidity and becomes alkaline. Instances of miliary eruptions preceding a favourable termination of dangerous cases are too well known to require to be insisted on; but both these and profuse sweats are too often also accidents of the ultimate stage of the disease, and, occurring then under desperate circumstances, we cannot expect that they would operate a cure. The surface of blisters may in some cases, also, open an issue for the puerperal poison; and M. Hervieux refers to cases in which, without anything existing in their condition to account for it, blisters exhaled a horrible fetidity. In these, apparently under the influence of such exhalations, sensible improvement took place, the pulse approaching its normal condition &c.

We have thus far had to deal with the natural channels; but in other cases, to use a term of M. Ricord's, an "effraction" may be advantageously established. This results from the spontaneous or artificial opening of purulent collections, and especially when these are peripheric.

Every accoucheur knows that the development of an abscess of the breast may often arrest peritonitis, uterine phlebitis, or diffuse phlegmon; that abscesses of the limbs possess the same power of diverting a serious inflammatory menace from the viscera; and that even arthritic manifestations in like manner determine morbigenous action upon organs which are at a distance from the pelvi-abdominal sphere. The practice of a maternity cannot be long followed without its being discovered that these different affections are not merely local, but that they are the expression or result of the efforts made by the economy to repel the evil from the centre towards the periphery, rendering the elimination of the toxical principle more inoffensive at those remote points. The success of such efforts is subordinated to the intensity of the epidemic movement; for if it were otherwise, how comes it that in certain years the most painful chaps, or the deepest fissures never give rise to abscess of the breast, while at certain epochs this organ becomes the seat of purulent formations in the greater number of puerperal women, whether they have chaps of the nipple or not? Experience has taught us that we should regard these peripheric manifestations with satisfaction—first, because they are an indication of the amelioration of the sanitary condition of the establishment; and next, because they provide in the individual cases an additional chance for the elimination of septic matter.

The knowledge of the above facts is not a mere matter of scientific curiosity, but has its bearing on therapeutics, for we are led to imitate nature in seeking to produce elimination. For this we have four means:—

1. *Emetics.*—The important part played by vomiting, whether at the commencement or advanced stages of puerperal poisoning, leaves us in no doubt as to this indication. Thus M. Hervieux has laid it down as a rule in his service that every newly-confined woman who falls ill, whatever may be the lesion she seems menaced with, must at once be submitted to the action of ipecac. In those women who are seriously attacked we do not thus prevent ulterior accidents, but we frequently succeed in the slighter forms of the disease and in mild epidemics. In any case it is rare for the general symptoms not to undergo some mitigation.

2. *Purgatives.*—These have never enjoyed the same favour with French practitioners as emetics, and yet they are one of the most certain and most active means in eliminatory treatment. But they must be employed with much tact and great lightness of hand, under pain of doing great mischief. The genius of the prevailing epidemic must be borne in mind, or we may risk the production of an incoercible diarrhœa and of hastening on the fatal termination. We may have an epidemic in which we may purge day after day without incurring any danger, and with great advantage, while in another a single purgative may determine a choleriform diarrhœa. In proportion as experience has initiated him into a more exact knowledge of the conditions favourable for the employment of purgatives, M. Hervieux has become more bold in their administration, and every day he finds them rendering him great service. It might seem from what is stated above that we should always respect vomiting and diarrhœa occurring in puerperal women. But to this there is some reservation to be made. Vomiting should be

respected at the commencement when it is not very abundant and tends to stop of its own accord. And nature's efforts may even be seconded by a dose of ipecac. But when it takes place insufficiently, and is purely bilious, and especially when it takes the form of regurgitation, it should be repressed, if this can be done, by the ordinary means—ice, seltzer-water, citrate of potass, but especially by diverting the eliminated matters towards the intestinal canal by purgative enemata. As to diarrhœa, it is salutary in the immense majority of cases, and it should only be arrested when, by its serous character and its persistence it becomes dangerous.

3. *Bleeding.*—This is an eliminatory agent of the first order, acting on the mass of the blood charged with the poisonous principle, time not yet having been sufficient for its deposit in the eliminatory organs. The fear, however, of adding to the debility caused by the natural loss of blood in parturition prevents one having recourse to it. The soundness of the principle of abstracting it is, however, shown every day by the excellent results which follow leeching, and especially cupping. These never fail to give great relief to women suffering from pelvi-abdominal affections and in some conditions they suffice to arrest the progress of puerperal accidents.

4. *Blisters.*—Although the revulsive action of these is that which is best demonstrated, yet they deserve great consideration as a method of elimination. But to this end it does not suffice for the epidermis to be partially raised at some points. The blister must be applied quite exactly and kept on sufficiently long to give rise to a voluminous ampulla and an abundant secretion of serum. The evacuation of this may contribute to the elimination of the poisonous principle. At all events blisters constitute one of the most powerful resources at our disposal for combating the local manifestations of pathological puerperality.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 238.—*Tympanites and Phantom Tumours.*

By T. SPENCER WELLS, F.R.C.S., Surgeon to the Queen's Household and to the Samaritan Hospital for Women.

(*Diseases of the Ovaries*, pp. 478. London. 1872.)

In his elaborate treatise on *Diseases of the Ovaries; their Diagnosis and Treatment*, Mr. Spencer Wells says, in speaking of the diagnosis between tympanites, phantom tumours, and ovarian disease, one may easily understand how tympanitic distension of the abdomen, which is not unfrequently seen in hysterical women, may give rise to some awkward questions; but, except from personal observation or the testimony of men so accurate as Bright, Simpson, or Boinet, it is difficult to believe that any surgeon of reasonable experience, or in his right senses, could be so deluded by such a condition as to think that he had before him a case of solid ovarian tumour, and attempt the operation of ovariotomy.

Yet Simpson says that it has happened no less than six times, and Bright published the following case in his work on abdominal tumours :—

"Susannah J., æt. thirty, said to have been ill for two years, was admitted, under my care, into Charity Ward, September 29th, 1824, complaining of abdominal pain and some hysteric symptoms. She had, in the middle line of the abdomen, about half-way between the umbilicus and symphysis pubis, an unhealed scar of about three inches in length. The deeper part of the wound had united, and it was filling up by granulation, as was a portion of the external part at each end of the scar. It was evidently an incised wound, and the account she gave was that her abdomen being swollen, as it was at the time she had formerly been in the hospital, a surgeon proposed to her the excision of a tumour which produced this swelling, and that, with two assistants, he prepared to perform the operation, and made a free incision into the abdominal cavity; but finding that there was no tumour,

brought the wound together, which now, after the lapse of several weeks, was as we saw it. The wound healed completely under common treatment, but her health remained in a most unsatisfactory state, both from the tendency to diarrhœa, and from the frequent succession of pains, with occasional puffing-up of the abdomen, of which she was the subject, so that she remained in the hospital till December 28.

"During this long confinement the tumour of the abdomen varied a good deal, and was on one or two occasions reported to have subsided entirely.

"I may mention further that I had seen this young woman many

years before, when she was in Guy's Hospital for a supposed abdominal tumour, under Dr. Marcet, who, however, soon discovered its hysteric character, though certainly the abdomen bore a very peculiar appearance, strongly resembling an encysted tumour; but there were connected with this supposed tumour so many other ailments, embracing fits of hysterics, epilepsy, paralysis, abdominal and lumbar pains, so varied and so changing, that a little observation was sufficient to convince any experienced person of its real character."

Boinet relates also that a miserable woman of weak intellect, tympanitic, and impressed with the notion that she had an abdominal tumour, was unfortunate enough to meet with two or three surgeons who from some unaccountable motives persuaded themselves that she had ovarian disease, and gave way to her importunate demands for an operation. Their rash gastrotomy only showed the existence of cancer, and killed the woman.

These hysterical distensions of the abdomen present themselves in a variety of forms. Sometimes the belly is uniformly blown up to the size of advanced pregnancy, and is rounded, hard, and resistent. The hand makes no impression on it, and change of position causes no alteration in shape. But, of course there is no fluctuation—the resonance is universal, hysterical symptoms are generally present, and, under the influence of chloroform the swelling entirely disappears, leaving the abdomen flaccid, and allowing the hand to rest upon the hard bones of the spine. In other cases the distensions are local, and it is noticed that they occur more often on the right side. Portions of the abdominal wall

are gathered up into rigid knots, which remain so long unaltered as fully to simulate an internal tumour, especially as they are sometimes situated over accumulations of hardened fæces, and are accompanied by a good deal of tenderness of the parts. Careful and patient palpation, purgatives, and chloroform, will generally lead to a solution of the mystery, or may even disclose the existence of an unsuspected incipient ovarian tumour, which by its presence in the pelvis had given rise to the train of hysterical symptoms, and, among others, to the superimposed swelling, apparently the most important matter calling for treatment.

The drawing on page 294, from a photograph by the late Dr. Wright, shows how very accurately one of these phantom tumours or the condition which Mr. Wells describes as hysteric tympanites, may resemble a uterine or ovarian tumour. The lower part of the abdomen arches forward exactly as in pregnancy, or as in an ovarian tumour of moderate size when the abdominal wall is not lax; and the wall is so tense, the patient so resists pressure, or complains so much of tenderness on pressure, and the abdominal muscles contract so spasmodically and irregularly, that it is by no means difficult to fancy that a tumour, or even the movements of a fœtus may be felt. The girl whose portrait is given on page 295 was in the Samaritan Hospital for some time, and it was difficult to convince her, her friends, and even some medical friends who saw her with Mr. Wells, that she had no abdominal tumour. The tympanitic resonance on percussion was, of course, the leading element in the diagnosis; but the most convincing test was the complete subsidence of the swelling and the flattening of the abdomen when the girl was fully under the influence of chloroform. The photograph from which the second drawing was taken was made while she was completely narcotized. The arched abdomen is seen to have been quite flattened, and it was easy, when the abdominal walls were so flaccid, to feel the pulsations of the aorta, the vertebral column, the brim of the pelvis, and to

become perfectly certain that there was no abdominal nor pelvic cyst of any kind. Yet the instant the effect of the chloroform began to pass away, the tumour always began to reappear. This was shown several times when the experiment was tried, and on one occasion Dr. Wright took a photograph when she was nearly awake (see page 296), and the tumour was almost as prominent as in her ordinary condition, shown in the first drawing. She was an hysterical girl, but there was no voluntary or conscious imposition on her part, so far as Mr. Wells could ascertain. She improved under a course of purgatives and steel.

Early last year (1872), a woman was sent to the Samaritan Hospital, supposed to be suffering from a large ovarian tumour. The tympanitic resonance, with the absence of fluctuation, at once showed that there could be no large abdominal tumour, but some hardness above the pubes led to a vaginal examination, when an early pregnancy was detected. On administering chloroform, the distended abdomen at once flattened down, and the outline of the enlarged uterus could be distinctly traced. This is the only case in which Mr. Wells has seen tympanites occur in a pregnant woman. He has, however, several times seen it accompanying small fibroid tumours of the uterus, uterine polypi, uterine displacements, and small ovarian tumours which have not risen out of the pelvis.

Art. 239.—*Report of three Cases of Vesico-Vaginal Fistula.*

By Evory Kennedy, M.D., late Master of the Rotundo Lying-in Hospital.

(*British Medical Journal*, August 17.)

Dr. Kennedy places on record the three following cases :—

Case I. *Vesico-vaginal Fistula cured by Twisted Suture.*—On August 12th, 1837, H. Byrne, aged twenty-five, was sent from the country suffering from vesico-vaginal fistula. The opening was longitudinal, about five lines long, with considerable loss of substance. It was about three inches from the urethral orifice. The bowels were well freed. She was placed on the abdomen on the edge of a table, with a bolster interposed. My four curved beak-tractors were introduced, and, her limbs being held fast by assistants, I pared the edges of the fistula with a scalpel, cutting on an ebony spatula ; and, having introduced three short needles into the wounded edges, drew them together with a twisted suture. A perforated shot was now squeezed on the end of each needle, an elastic catheter introduced into the bladder, and the patient was placed lying on her abdomen, on bolsters stitched together longitudinally. She was retained in this position, and closely watched day and night, by a relay of nurses, who never left her. The urine flowed freely from the urethra into a bladder attached to the catheter. Her bowels were washed out by lavement. Not a drop of urine escaped from the vagina. The sutures were cut out on the fifth day and the needles removed, when the union was complete. She left the hospital in a fortnight perfectly well. I had the advantage of the assistance of my late colleague, the distinguished surgeon Mr. Abraham Collis,

in this case; and I cannot easily forget the gratification he evinced when he made a final examination of the bladder before the patient left the hospital, nor the significant manner in which he answered my inquiry whether he could find any hole. "No, doctor; I can't find a hole, unless I make one;" and added, with a peculiarly expressive shrug of his shoulders, with which those who knew him were familiar, "I am sure you don't wish me to do that."

Case II. *Vesico-vaginal Fistula treated by Cautery.*—Honor Lattan was admitted in May, 1836, with a vesico-vaginal fistula an inch and a half from the meatus, transversely oval, with the edges thinned off, and large enough to admit the point of the little finger. She suffered from constant escape of urine ever since her first of two labours in the country, which lasted for seventy-two hours. The vulva was excoriated, red, tumid, and tender, with gritty deposit. Lead-poultices and the use of the catheter were had recourse to for some days; and then she was placed on the abdomen on the table, the tractors were introduced, and the button actual cautery applied to the stricture surrounding the aperture. After this she was slung from the bedposts in a sheet, lying upon the abdomen, with the catheter introduced. This operation was repeated at intervals, at first of five days, and subsequently at intervals of eight or ten days; and she left on the 26th of July, able to retain her urine for two hours, and only disturbed twice at night. The edges were again touched on the 11th of August; and on the 30th she described herself as free from inconvenience, retaining her urine regularly for three hours through the day, and being even able to go on often without relieving the bladder more than three times in the day and twice at night. The spot remaining ununited was reduced to a small pin-hole, such as you see represented in this drawing of Bridget Byrne, a case somewhat similarly treated, and with similar results.

Case III. *Vesico-vaginal Fistula treated by Cautery and Pessary.*—Mary Cathcart (November, 1837) suffered from a slough of the vesico-vaginal septum in her first labour in the country. The fistula was small, circular, about two inches and a half from the meatus, and rather to the right side. This was considerably diminished by one application of the actual cautery a month after her third delivery; but, as this was followed by peritonitis, it was determined not to repeat any operation. A cast model of the vagina, made of dentist's wax, was taken. This was done by introducing the soft wax, with a tape for extraction embedded in its centre, through a speculum partially introduced. A caoutchouc mould was made from this, which fitted the vagina accurately, and was worn constantly as a pessary. The result of this simple contrivance, to use the words of my then clinical clerk, copied from his report, was, that "she experienced much comfort, being enabled by its use to retain her urine to a convenient length of time, and evacuate the contents of the bladder at pleasure, without withdrawing the instrument." I should, however, mention that I have since several times repeated this plan, using the cautery in preference to the ligature, or where this was objected to; and it has generally enabled the patient to retain her urine for some time. It has, however, not always been attended with the same amount of success. In fact it is more adapted to very small fistulous apertures or to those that have been reduced by the use of the cautery.

Art. 240.—*Total Occlusion of Vagina—Operation—Animation suspended for upwards of Twenty-two Minutes by Chloroform.*

By Evory Kennedy, M.D., late Master of the Rotundo Lying-in Hospital.

(*British Medical Journal*, August 17.)

At the fortieth annual meeting of the British Medical Association, Dr. Kennedy narrated the following case :—

Some years ago, Dr. Ringland and I were called upon to operate in a case of a lady with total occlusion of the vagina. The examination could only be made through the rectum. The anterior and posterior walls of the vagina were united almost throughout their whole length. There was a sense of fluctuation perceptible on pressing the finger high up into the bowel. A tumid fulness was perceptible over the pubes, to about the extent of a six months' pregnancy. The bladder and rectum were emptied ; and the patient was placed on her back, on a high couch, with the limbs flexed and held by assistants, as in lithotomy. The patient was with some little difficulty brought under the influence of chloroform. I had commenced the operation, when she struggled so that I was obliged to desist, and assist in bringing her completely under its influence before again commencing. A catheter was introduced into the bladder, and the dissection was proceeded with, cutting and separating the adherent tissues with the blade and handle of the scalpel alternately ; now introducing the finger into the rectum, and again feeling through the anterior wall for the catheter, to avoid approaching too closely to either cavity—a scarcely appreciable divergence in either direction being fraught with misery to our patient for life. From the difficulties and risk attending the operation, it was necessarily a tedious one ; "rapidity" in such an operation being a convertible term for "destruction." At length, after cutting for three inches upwards, and dissecting a new vaginal canal by dividing throughout this extent a layer of condensed structure not more than the sixth of an inch in thickness, we had the gratification of coming to a small pouch at the upper part of the vagina, which communicated with the distended uterus, and from which poured a quantity of grumous retained menstrual fluid. Having thoroughly enlarged the opening at the upper part, so as to correspond with the dimensions of the canal throughout, I got up from the operation to receive a shock such as I never experienced before or since. Our attention was called by the chloroformist to our patient, who lay with her head over the edge of the table, her jaw fallen, and to all appearance dead. There was no respiration ; no pulse at the wrist; no action of the heart. I took out my watch, in order to take care that attempts to restore animation should be continued for a sufficient time before desisting, but without a hope that they could be attended with success. Experience in resuscitation of infants had led me to expect little from forcible inflation of the lungs by inserting a tube into the trachea, but much from a continuous and persistent imitation of the act of respiration by regular pressure on the elastic ribs of the subject—producing, as nearly as possible, the systole and diastole of the lungs and chest-frame, as observed in nature. Without a moment's delay I sprang upon the high table, so as to command the prostrate woman ; and, kneeling across her, placed a spread hand over the lower ribs, and kept up an artificial respiratory action in the lungs of about twenty pressures in the minute. In the meantime, all the available means of resuscitation were most assiduously carried out

by my friend Dr. Ringland and his assistants. Friction and sinapisms were applied to the arms, legs, and surface. As speedily as buckets of warm water could be procured, her hands, feet, and limbs were immersed in it. These efforts were persisted in, whilst minute after minute was anxiously counted, with not the slightest evidence of restored vitality. At length, our souls absolutely sickened with disappointment, and, I may add, all hope having fled, we were, at the expiration of twenty-two minutes, repaid for our exertions by a convulsive gasp. Nearly a minute took place before a second occurred. Then they recurred at half-minute intervals; and eventually the natural breathing became established, and the artificial respiration was desisted from. Sickness now set in. She was unable to assist in the involuntary efforts to discharge the stomach. The food blocked up the œsophagus and posterior fauces; but by drawing the head and neck over the edge of the table, and giving her the advantage of gravity whilst the finger was passed into the œsophagus, the obstructing food and mucus were removed and respiration was established. A second collapse ensued after a few minutes, consequent on the evacuation of the uterus; but after this she recovered without a check. A curious circumstance, in a psychological point of view, should not be omitted. When she recovered her sensibility and powers of perception and speech, within a few minutes after respiration was re-established, looking steadfastly at one of the physicians present, she asked slowly and with some effort, "Is that Jesus Christ?" Where was her soul during that period of suspended animation? It might be surmised that this case would shake one's confidence in chloroform. With me it had an entirely contrary effect, as it proved the power—perhaps I should say the capability—of restoring vitality suspended by its use under circumstances apparently hopeless.

Art. 241.—*Abstract of two Lectures on the Diagnosis of Pelvic Swellings, delivered at the Hospital for Women.*

By Heywood Smith, M.A., M.D. Oxon., Physician to the Hospital for Women and to the British Lying-in Hospital.

(*The Lancet*, June 22.)

After a few introductory remarks on diagnosis, arising out of Hippocrates' aphorism, "the coming-to-a-conclusion is difficult," the lecturer sketched the method he considered the best for eliciting the correct history of a case, and then, going at once to the subject, said: "I make no apology for using the word 'swelling' in preference to the ordinary Latin word 'tumour.' My reason for doing so is this: In some way or other the word *tumour*, while including all the signification of swelling, has added to it in the public mind the idea, not merely of the swelling of a part, but of a growth more or less separate or separable, and generally of a dangerous character. This idea of an entity independent of surrounding structures is often fixed so indelibly in the patient's mind that the hope of a remedy prompts the frequent question, 'Can I have it dispersed, or must it be cut out?' It seems so important to do away entirely with this erroneous impression from the minds, not only of our patients, but also of ourselves, that I have used this word 'swelling' as conveying a meaning more akin to the truth. With regard to the limitation 'pelvic,' by it I would confine our present

investigation to those swellings that lie wholly, or have their greater part situate, within the boundaries of the pelvis."

The exercise of the various senses as means of diagnosis was then fully explained, and the various methods usefully tabulated; but there is only room here for their partial enumeration. The sense of *touch* was divided into *immediate* and *intermediate*. Under the head of immediate touch were placed: (1) the simple digital touch, (*a*) of the vagina, (*b*) of the rectum; (2) the "double touch"—bidigital touch, or recto-vaginal examination; (3) the conjoined examination; and (4) abdominal palpation. Intermediate touch was explained to be that by the sound, whether uterine or vesical, and also by the thermometer. The sense of sight is exercised usually through specula of various devices directly on the object, or on fluids withdrawn by fine trocars, or by the microscope. Hearing is called into play in immediate or intermediate auscultation, and in discriminating between the often slight variety of note or pitch elicited from immediate or intermediate percussion. In speaking of immediate touch, Dr. Heywood Smith said: "It may here be remarked that, as a rule, the sensation of touch, as perceived by an internal examination, is such as to convey to our minds the presence of a body larger than really exists. The following explanation is submitted as not altogether improbable: The apprehension by the mind of degrees of comparison stands in relation to brain-work as given out in nervous energy. Now our ordinary measurements by the sight need but little movement of the eyes; also, on calling in touch to our aid, an object is usually grasped by several fingers at once, necessitating but little motion; but, in internal examination, it is necessary that the point of the finger should journey round a tumour in order to comprehend it, and the mind, taking the cognisance of the size by the amount of motion required, builds up an idea of comparative greatness so much larger in proportion to the nervous energy expended in acquiring the information."

The lecturer then, before dividing the subject-matter under its various heads, made some remarks on the morals of vaginal examinations, in the course of which he said: "If a patient applied to a physician for diseases of the chest, he would be deemed to have gone into the case but superficially unless he had made a most thorough examination by means of every appliance that could be brought to bear on the subject. In the same way, and similarly as a matter of course, the pelvis should be examined where there are indications of its necessity. The indelicacy lies not in the examination itself, but in making much, or indeed anything, of it; the necessity arises out of the very nature of the case, and it should never be introduced with a preface, as if it were out of the usual order of things, but undertaken in the ordinary investigation of the case with the same unaffected ease with which a sight of the tongue would be requested."

The system of classification chosen as that considered the best under which to arrange the large amount of material was the anatomical; and the first main division was into (1) normal and (2) abnormal pelvic swellings.

1. The normal pelvic swellings may be thus enumerated—(*a*) the bladder full; (*b*) the uterus unimpregnated; (*c*) the uterus impregnated; and (*d*) the rectum loaded with fæces.

2. Abnormal pelvic swellings were considered in relation to the various organs and tissues involved, and embraced swellings connected with the bladder, the uterus (fundus and cervix), the ovaries, the oviducts, the broad ligaments, the vagina, the rectum, and, finally, any swelling within the pelvis that had not been included in the above list.

Among swellings connected with the bladder were mentioned and illustrated calculus, abscess, cancer, cystocele, foreign bodies &c. In diseases of the uterus the cervix uteri is the portion which most often shows itself as a pelvic swelling, especially in its state of cancer of various forms, chronic inflammation with deposit, engorgement with elongation of the cervix uteri, polypi of various kinds, and the occasional malformation of a double uterus. Cancer of the cervix uteri in its early stage has, in the form of scirrhus, to be differentiated from indurated (benignant) deposit in the labia uteri, and in the form of epithelioma to be separated from rodent ulcer, syphilis, and granular inflammation seated upon a hard basis in the cervix.

For the diagnosis of these several maladies, it is not merely requisite that the different morbid appearances should be most carefully observed, but also that the histories of the cases should be most accurately gone into and traced, so as, if possible, to make the diagnosis tolerably certain by the very history, and almost independently of any examination. The cases of induration of the cervix uteri present a hardness often circumscribed, occasionally involving the whole of one lip. In these cases the submucous hardness seems to lie at a somewhat greater depth below the membrane than does the hard tissue of carcinoma.

Sometimes diseases affecting only the body or fundus uteri present themselves per vaginam as pelvic swellings. Cancer of the fundus unassociated with, or, in fact, secondary to, carcinoma cervicis is rare; yet when it does occur it may be mistaken in diagnosis for fibrous tumour. The cervix high up or the body is felt to be bulging and hard, not very tender; the os uteri not patent; no discharge; in fact, the case may lack the characteristics of cancer. The history, too, may not be much help, for women will often live for several years before they find out that they are the subjects of fibrous tumours; and in cancer, in some cases, the disease may advance some way with scarcely any pain and without discharge. In such a case the passage of the sound will generally reveal the nature of the swelling; for when it touches a cancerous mass some bleeding is usually set up, and doubtless, at the same time, some pain too. Should, however, the diagnosis be not even then cleared up, the lips of the womb should be divided freely bilaterally, when cancer would reveal itself by being forced through the os uteri. A fibrous tumour might also thus, under certain circumstances, be forced through, or rendered amenable for exploration; and in that case divisions might enable further remedial measures to be taken. In the case, however, of fibrous tumours the history should be taken into consideration, as these may exist without much evidence of their presence for many a year. While speaking of uterine fundal swellings, it may not be out of place here to mention chronic inversion of the uterus, a condition liable, without due care, to be mistaken for a polypus; but the passage of the sound, disclosing an invagination of cervical tissue, determines the solution of the difficulty.

The lecturer then came to consider the various versions and flexions of the uterus, inasmuch as they produced pelvic swellings which it was absolutely necessary should be differentiated from each other and from other morbid conditions for the purposes of diagnosis. In considering *anteversion* it must be borne in mind that to constitute an abnormality the uterus must lie nearly horizontally; the natural position of the organ being at right angles to the plane of the pelvic brim, and so anteverted as regards the perpendicular. In *retroversion* attention is called to some difficulty in defecation, with backache, among other things, and the simple touch generally reveals the nature of the dislocation. In *retroflexion*, however, while these symptoms are generally exaggerated, there is also a post-cervical swelling separated from the cervix by a sulcus which is not found in retroversion. That this swelling is the flexed fundus is only to be demonstrated by the introduction of the uterine sound, for the proper use of which minute directions were given. *Anteflexion*, on the other hand, was described as producing more severe subjective symptoms, and for its proof requiring the careful use of the sound. These flexions were also referred to as occurring in the impregnated uterus. Other organs, some of whose morbid conditions should be ranged under the head of pelvic swellings, were then considered—namely, the ovaries as felt in chronic and acute ovaritis; also all the ovarian cyst formations, whether unilocular, multilocular, or histoid of various kinds. After referring to diseases of the oviducts, the pelvic swellings that are connected with the broad ligament claimed attention; these arise from cysts, pelvic cellulitis, abscess, periuterine serous effusion, and parauterine, or extra-peritoneal areolar hæmatocele. Cysts are scarcely distinguishable from those of the ovary save by their contents Cellulitis is differentiated by its history from hæmatocele, and both from fibrous tumours by the absence of constitutional symptoms with the latter, and by the use of the simple touch with the uterine sound. Pelvic swellings confined to the vagina may be caused by abscess in its wall, cancer, cicatrices, fibrous tumour, syphilis, condylomata, cysts, polypi, and foreign bodies. Cancer of the rectum may produce a pelvic swelling felt per vaginam, as also rectocele.

Dr. Heywood Smith then drew attention to certain swellings that might be present in the pelvis, and which had not been included in the above classification, as increased projection of the promontory of the sacrum, exostosis, cancer of the bone of the pelvis, abscess of the kidney, extra-uterine fœtation, enterocele, hydatids, aneurism, and post-uterine intra peritoneal hæmatocele. The bony diseases are recognised by their hardness, which, in osteo-sarcoma, is varied by portions of friability. Pyonephrosis may extend into the pelvis and produce a swelling. The diagnosis of extra-uterine fœtation was carefully gone into, and its differentiation from fibrous tumour and ovarian cyst indicated. The rare accident of enterocele was explained, and hydatids and aneurism alluded to to render the list complete; and the last pelvic swelling considered was intra-peritoneal hæmatocele. This was explained to be more a symptom, though a very grave one, of some mischief, happening generally suddenly, in connexion with some previously diseased pelvic organ. A table was shown exhibiting, in parallel columns, the differentiating signs and symptoms between it and pelvic cellulitis, extra-uterine

pregnancy, ovarian cyst, fibrous tumours, retroflexion of the uterus, and extra-peritoneal hæmatocele respectively.

The lecturer concluded with these words: "In order to diagnose pelvic swellings with accuracy, it is necessary that we should habituate ourselves to an orderly, deliberate, and logical investigation of the question before us; and failing, as we so often do, to be able to grasp special pathognomonic signs, let us give our careful attention to the following: (1) to any deviation from the normal state of any function, not only of the organ affected with disease, but also of neighbouring organs or organs functionally connected; (2) to all the absolute physical changes in any part under observation which may be discovered by any means in our power. To these ends we should bring to bear all the knowledge and appliances that modern medicine has furnished us with. And when we have done all this conscientiously, and have come to a conclusion which we have every reason to believe is a right one, how humiliating to have to confess that that labour has only given us the knowledge of the existence and character of the disease, and that on arriving at a correct diagnosis we have scarcely even entered the solemn portals of our art."

ART. 242.—*Retroflexion of the Uterus—Progressive Hemiplegia—Depressed Temperature—Epileptic Fits and Menorrhagia—Recovery.**

By THOMAS CHAMBERS, M.R.C.P. Lond.

(*British Medical Journal*, August 24.)

Mrs. L. J., aged forty-nine, widow, was admitted into the Chelsea Hospital for Women on May 2nd, 1872. Her health had been good up to July 6th, 1865, on which day, while coming quickly downstairs, having on high-heeled boots, her foot slipped and she fell suddenly on the buttock. This was followed by sickness and great pain at the lower part of the spine, which pain continued for seven years. In about a week the left foot and leg became cold and numb; and gradually the whole of the left side became cold and more or less paralysed. Menstruation became more and more disturbed until the beginning of 1871, when the menorrhagia became continuous. In 1869 she had a severe epileptic fit, and others in eighteen months. When admitted she was very thin, withered, and "pain-worn;" pulse 120, small; the urine scanty, high coloured, with acid reaction; it contained no albumen. She had excruciating pains at the lower part of the back, shooting up the spine and through the head whenever she moved about. The grasping power of the left hand was impaired. She had but limited control over the movements of the left leg. The coccyx was severed from the sacrum. The slightest movement gave her intense pain; defæcation was very painful. The uterus was acutely retroflexed, low down in the pelvis, and very painful. The os uteri readily admitted the end of the index finger; its mucous membrane was much congested and swollen, bleeding

* Read before the British Medical Association.

freely on touch. An attempt was made to introduce the sound, but had to be abandoned in consequence of the pain produced. The coccyx was replaced and sustained by a vaginal plug. She was kept quiet in bed; had milk diet, beef-tea, two eggs, and three ounces of brandy daily; also a grain of opium in pill, and ten grains of bromide of potassium in cinchona mixture three times daily. This treatment was quietly pursued for three weeks. On May 24 her general health had improved. She was put under chloroform; the uterus was replaced; and, after a little careful manœuvring, an intra-uterine stem was introduced. Within twenty minutes after the introduction of the stem, the whole of the left side, which had been as cold as marble for seven years, had become perfectly warm; there was a good deal of hot tingling for a time, but in twenty-four hours it had passed off, and the whole side was warm and comfortable as the other. The hemiplegia became less from day to day, and in three weeks it had passed away altogether. The stem was removed on the ninth day, after which all discharge soon passed away, and menstruation assumed its natural periods. She was discharged cured on July 31, 1872.

Art. 243.—*On the Removal of Portions of Morbid Tissue in Cases of Carcinoma Uteri.**

By A. R. Simpson, M.D. Edin.

(*British Medical Journal*, Aug. 24.)

Dr. Simpson, in his communication, advocated the removal of portions of the diseased tissue in cases of carcinoma uteri, even where there was no possibility of complete extirpation. The risks were but slight, and the advantages accruing were arrest of the hæmorrhage and other exhausting and noxious discharges, and relief of pain, more especially in cases of intra-uterine disease, of which some illustrative instances were adduced. Where the part to be removed could be surrounded by the loop of a wire or chain, the amputation was best effected by means of the galvano-cautery or the *écraseur;* where the cancerous growth was flat or excavated it needed to be dug out with a scoop or *curette.* It was usually advisable to apply perchloride of iron to the raw surface, which remained healthy for some time afterwards; and the chlorate of potash had been found a useful application to cancerous surfaces.

Art. 244.—*New Insufflator for Treating Diseases of the Uterus, &c. with Medicated Powdered Charcoal.*

By John Clay, Obstetric Surgeon to the Queen's Hospital, Birmingham.

(*The Lancet*, Nov. 30.)

Mr. Clay has been engaged for some time in testing the advantages of insufflation by means of powdered substances where local applica-

* Read before the British Medical Association.

tions to the uterus and vagina have been deemed advisable, and has found that finely powdered wood charcoal is the most convenient for the purpose, and has applied by insufflation from one to two grains of the nitrate of silver, and from two to five grains of tannic acid, persulphate of iron, &c., mixed with equal portions of the charcoal, and sometimes combined with morphia, to the interior of the uterus, as well as to the os and cervix uteri, with excellent results, and without producing those distressing uterine colics so often manifested when these agents have been used to the uterus in a liquid form. Tannic acid, oxide of bismuth, alum, &c., but in larger quantities, have been applied to the vagina in the same way, followed after a time by a marked amelioration of distressing symptoms, or by a rapid cure of the disease from which the patient was suffering.

It is sometimes necessary to remove the tenacious mucus from the cervix uteri previous to insufflation. This may be efficiently effected by means of a narrow strip of lint wound round the end of a stilette, and withdrawn in a spiral form after being passed into the uterus. The secretion from the os uteri and vagina is best removed by dry lint or sponge, injections not being so advantageous for the insufflation afterwards.

The application of the powder is made with an instrument, for which Mr. Clay states he is indebted to Messrs. Salt and Son, of Birmingham, for the great ingenuity and care bestowed by them in perfecting it, and which fully meets his wishes. The powder can be applied to the interior of the uterus with the instrument, without the previous use of tangle or sponge tents. Insufflation to the os uteri and vagina is easily effected by means of Blackbee's speculum, which is a convenient instrument for the purpose.

In certain affections of the rectum Mr. Clay has found insufflation through an anal speculum to prove very serviceable, being much more convenient than lotions or ointments.

Art. 245.—*On Ulceration of the Vaginal Portion of the Womb, in Connexion with Chronic Metritis and Vaginal Blennorrhœa.*

By Dr. Joseph Pollak, of Vienna.

(*Oesterreichische Zeitschrift für praktische Heilkunde*, xvii. 13; *Schmidt's Jahrbücher*, No. 4, 1872.)

"In cases of chronic metritis and mucous discharges from the vagina, ulceration varying between slight excoriation of the epithelium to deeply invading sores, is a very usual phenomenon on the lips of the os uteri. The ulcers may readily escape notice on digital examination, but can be always made out on ocular inspection. They owe their origin to the mechanical irritation caused by the contact of morbid secretions with the mucous surfaces, in consequence of which the epithelium, after being kept constantly wet with discharge is destroyed, and then superficial or deeply extending suppuration takes place. They are most frequently

found on the posterior lip, and in this situation are very rebellious to treatment at first. They diminish rapidly in size, like ulcers on the legs, by drawing towards them the surrounding tissues; they then remain of about the same size for a long time, and finally heal slowly by cicatrization extending from their edges. In cases of ordinary ulceration, with rational treatment of the original affection, from two to five applications of nitrate of silver, each made after an interval of five days, will suffice for cure; but in obstinate chronic metritis a longer time is required for the treatment of the ulcers, and from eight to ten, or even, in some instances, twenty applications of the nitrate of silver.

Art. 246.—*Fibroid Degeneration of the Uterus, and the best way of Treating it.**

By Protheroe Smith, M.D.

(*British Medical Journal*, August 24.)

Dr. P. Smith drew a distinction between the polypi formed in the contractile tissue of the uterus and those of the soft lining tissue. The former alone are fibroid. When protruding internally they become polypoid, and are easily removed; when, however, occurring externally, either projected through the contractile tissue or formed in the connective tissue separating it from the peritoneum, and so becoming subperitoneal fibroids, they can only be removed, if pedunculated, by abdominal section, or by the almost unjustifiable operation of the entire extirpation of the uterus and its appendages, when extensively implicating the organ. In intramural fibroids he advocated their cure by enucleation, after division and dilatation of the cervix. He was led first to adopt this measure of the gradual separation of the fibroid from the uterine tissue, and its removal piecemeal, by a case cited from his practice at the Hospital for Women in 1865, which first suggested the idea of getting rid of these morbid growths through the natural passages, by the help of the natural powers of expulsion, augmented by the use of ergot and borax. He preferred the use of the ligature by means of Gooch's canula, to the *écraseur;* and pointed out the danger of extensively separating the disease before its removal, from disintegration of tissue and pyæmia. Distinctions were drawn between the disease when infesting the cervix, and simple hypertrophy or cervical areolar hyperplasia and *elongement;* and to illustrate the mode of treatment he had successfully pursued, a recent case was quoted, diagnosed microscopically as fibroid, and cured by the repeated use of caustic potassa, by the *modus medendi* which was described.

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* Read before the British Medical Association.

Art. 247.—*On Fibrous Tumours of the Uterus.*

By George H. Kidd, M.D.

(*Medical Press and Circular*, August 28.)

At a recent meeting of the Dublin Obstetrical Society, Dr. Kidd read a communication on fibrous tumours of the uterus, of which the following is an abstract :—

He remarked that in the books fibrous tumours are spoken of as of three classes. We have fibrous tumours found on the outer surface of the uterus, or sub-peritoneal tumours. We have found them in the substance of the uterus, or intramural tumours, and we have found them in the interior of the uterus, or intra-uterine tumours. The sub-peritoneal tumours are, as we know, the largest, and are very frequently numerous. There are cases recorded of tumours of this kind 70lbs. in weight. The chief importance of subperitoneal tumours arises from their size and their position. The remark has been made by Cruveilhier that the sub-peritoneal tumour is not accompanied by hæmorrhage; but a doubt has been thrown upon the absolute correctness of this statement. I now lay before you a uterus having on its outer surface a very small specimen of a sub-peritoneal tumour, not larger than a large-sized filbert; but there is a soft mucous polypus growing from the inner surface, at the fundus, and projecting into the cavity of the uterus, and there is also at the os-internum a number of cystic polypi. It was a case where we had a sub-peritoneal tumour combined with intra-uterine polypi, in which the fibrous tumour might have been recognised during life and the polypi have remained undetected. I can very well imagine that in such a case as this you might have a sub-peritoneal tumour complicated with hæmorrhage due to the polypus and not to the tumour. This, then, would afford a satisfactory explanation for the occurrence of hæmorrhage in connexion with sub-peritoneal tumours. I could not obtain any history of the uterine symptoms during life. The chief importance, however, of the sub-peritoneal tumours is from the mechanical inconvenience they cause. I have notes of a very remarkable tumour of this kind that I had the opportunity of observing from the beginning to the end. It was the case of an unmarried lady who consulted me for a tumour. It was then about the size of a goose's egg. A second tumour developed itself as I watched the progress of the case.

On examination, in 1859, I found a tumour of stony hardness; and on passing a sound into the uterus, I found this organ of the normal length and, as I have already mentioned, pushed upwards and forwards. The tumour behind the uterus increased in size so much, that there was a difficulty in getting the bowels to act, and at each menstrual period there was great pain in the tumour, and she suffered from great sickness of stomach. At no time was there uterine hæmorrhage.

In 1861, Dr. Churchill saw this lady. The whole of the upper part of the pelvis was occupied by the large hard solid mass, so tightly wedged into the pelvis as to be quite immovable: and the tumour rose in the abdomen to midway between the umbilicus and xiphoid cartilage. The constipated bowels and difficulty of defæcation continued. But the

greatest source of complaint now was excessive pain along the course of the great sciatic nerve of the right side. Dr. Churchill suggested the use of an air pessary strongly inflated, to bear the pressure of the tumour off the sacral plexus of nerves, and to gradually raise the tumour off the rectum. This was used for some months and afforded considerable relief. The lady now went to the county Wexford, and was under the care of Dr. Isdell, who wrote to me that she had a fibrous tumour so completely blocking up the pelvis, that he thought defæcation would soon be impossible.

This is a very marked example of the mechanical inconvenience arising from this class of tumours. The pain in the sciatic nerve was intense, and it was something frightful to witness her agony arising from it.

At the end of 1863, menstruation now ceased, and the abdomen gradually diminished in size; the pain and sickness of the stomach ceased; and the abdominal tumour disappeared without its going being in any way noticed, except from the diminution of size, which was so gradual as to be only known by the result, and not by the process. The general health was greatly improved.

On 26th of June 1867, I could not detect any tumour in the abdomen. On passing my finger into the vagina, I found a firm round tumour in Douglas's space. The uterus was easily felt, pushed a little forwards by the tumour, but nearly in its normal position.

This was one of the most remarkable cases I have ever known of the disappearance of a fibrous tumour.

The pressure here was upon the rectum and the sacral plexus of nerves, and the pessary afforded the patient great relief. In other instances the pressure is upon the urethra and upon the neck of the bladder.

The following case is an example of this:—A. D., an unmarried woman between forty and fifty years of age. During the last fourteen months had frequently suffered from retention of urine, and was obliged to have a catheter passed. On examination, a fibrous tumour was found growing from the posterior wall of the uterus, lying in the concavity of the sacrum, and forcing the uterus against the neck of the bladder. The tumour was fixed in this position. I tried unsuccessfully first to move it with my hand by placing my finger in the vagina and pressing it up. I then placed one of Barnes' India-rubber bags in the rectum and forced water into it by means of a syringe. As I forced the water into the bag it gradually lifted the tumour out of the pelvis, got it above the brim, and allowed the neck of the uterus to come down into its normal position. I then removed the bag, and placed in the vagina one of Hodge's pessaries. The woman complained, next day, that she had a tumour in the abdomen, which she had not had before. I have seen this woman frequently. The tumour is still in the abdomen, had not returned into the pelvis, and she never had any further difficulty in passing water.

Cases of this kind illustrate a remarkable circumstance—that the inconvenience arising from them, although mechanical, is intermittent. This woman suffered from retention of urine, but by means of baths she got relief, except on five occasions when the catheter had to be used. I think it is a remark of Dr. Charles Johnson, that a permanent obstruction of the rectum has never been recorded as arising from the pressure of a fibrous tumour, but you may have at intervals serious obstruction

in the rectum. I think these tumours often become increased at the menstrual period. The first case, where pain in the sciatic nerve was always aggravated at the menstrual period, is a case of that kind. Another circumstance influencing them is the condition of the bowels. These tumours are also liable to become œdematous by being in some degree infiltrated with serum.

The increase of pressure by flatulent distention of the bowels was very forcibly brought under my observation in a case I saw with Dr. Gordon and the late Dr. Beatty. It was not, however, I believe, a fibrous tumour. The case was that of a lady who had been under Dr. Gordon's observation for a tumour occupying the left and lower part of the abdomen. In some way the bowels became obstructed, and she was for a very considerable period unable to pass anything from them. The abdomen became enormously distended, and we had all the symptoms of intestinal obstruction. We felt that if we once made an incision into the abdomen, and the intestines escaped, we never should be able to get them back again, so great was their flatulent distention. After trying many means to obtain relief, we passed a fine trocar into the transverse arch of the colon. A great escape of gas took place. The candle having been brought near, the gas took fire, and a blue flame was formed two or three inches in length. The next day the bowels acted freely, and continued to act for some time, until she gradually sunk and died from other causes. It shows that flatulent distension of the bowels may cause a tumour to press on neighbouring organs.

The next point to which I desire to call your attention is the disappearance of fibrous tumours. In the case of the sub-peritoneal tumour that I have related, I believe the tumour disappeared by absorption. There was no escape of anything that could account for its disappearance. Another change these tumours undergo is that of calcification, especially after menstruation has ceased. Reasoning on this, the use of chloride of calcium was suggested, and Dr. McClintock speaks highly of it. I do not know that I can give you an absolute proof of the diminution of tumours from the use of chloride of calcium, but the patients express themselves very much relieved by the use of it.

The next class of tumours are the intra-mural tumours. I have not much experience of my own to record with regard to intra-mural tumours. In my experience they are the least amenable to treatment, while they are the most serious, perhaps, to the patient. They cause sometimes great hæmorrhage. I had a case of intra-mural tumour, where I had an opportunity of dissecting the patient, and yet there was no history of hæmorrhage, even though the cavity of the uterus was much enlarged. In other cases not nearly of that size, the hæmorrhage was excessive. I believe the difference is owing to this—when the tumour is near the mucous surface, and presses on it, you have hæmorrhage; when it is in the substance of the wall of the uterus, and grows towards the outer surface, there will probably be no hæmorrhage. Many methods have been suggested for the treatment of these cases—incision into the capsule of the tumour, gouging, incision of the neck of the uterus, &c.

I have never seen a case where it seemed desirable to adopt these methods of treatment; and, indeed, they seem more likely to be useful

in cases of intra-uterine tumours, which we now know can be removed. The injection of perchloride of iron has also been used to check hæmorrhage. That, in my experience, is the least useful and the most dangerous treatment. The last case in which I tried it proved fatal. The woman got a low form of metritis and died. Nitric acid does not produce nearly the same amount of irritation, and is more beneficial. The palliative treatment is of great importance in these cases, and the best form of it is plugging.

It has become the fashion of late to plug with cotton, and I have fallen into the way with others. It is a peculiarity of cotton, that as you wet it, it becomes contracted and occupies a smaller space than it did at first. When placed in the vagina it becomes wet with blood, contracts greatly, and leaves the vagina free enough to allow a discharge of blood. Sponge is the reverse of cotton; it expands when wet, and fills the vagina more completely. When the cotton plug is wet the blood will trickle past it; whereas the blood gets into the interstices of the sponge and coagulates, and the hæmorrhage is arrested. There is one way in which cotton can be rendered more efficient, and that is by saturating the first portion introduced with perchloride of iron; this produces coagulation, and the bleeding is checked. And a more efficient method, when it can be managed, is to plug the os uteri itself with a piece of prepared sponge.

Intra-uterine tumours may grow from any part of the uterus, but I never met with one growing in the canal of the cervix. They grow, in my experience, chiefly from the cavity or body of the uterus. My present experience of these tumours, where you have one side of the uterus bulged out, is that the pedicle of the tumour is attached opposite to the bulging part of the uterus. I have seen a number of these cases. So frequently have I met with this circumstance, that the tumour bulges out the wall of the uterus opposite to where it is attached, that I have ventured to predict where the attachment of the tumour would be found, and I have been, up to the present, invariably right.

The tumour I next exhibit was the first large-sized one I ever removed. In my operations for small tumours and polypi, I was in the habit of using for an *écraseur* a soft iron wire, and I thought there were advantages in using it. I attempted to remove this tumour with a soft iron wire and failed completely. My patient waited a few weeks, I tried again, and succeeded at the first effort in removing the tumour. I succeeded because I used a steel wire, a piece of piano string, in fact, which answered the purpose admirably. The long neck of the uterus is dilated with sea-tangle until the finger can go up, and the tumour is caught and fixed by a vulsellum. The soft wire when passed up assumes the shape of the canal of the cervix, and it is difficult to expand it again so as to get it round a large tumour. By using a steel wire you can compress it to get it through the narrow os, and when you get it up it expands by its own elasticity, and you can slip it over the tumour with ease. The next large tumour I attempted to remove grew from the fundus of the uterus. So deterred was I by the difficulty I had experienced in using the soft wire; turning it over in my mind, Dr. Barnes' suggestion to use steel wire for dividing the fœtal head in certain cases of difficult labour occurred to me, and I

determined to try it, and with it I succeeded in snaring the tumour and taking it away at the first attempt. She had been nearly dead when she came into hospital. In fact she had been taken out of her bed and laid on the floor "to die easy," according to the superstition of the country, when Dr. Clarke, of Bailieboro', who was passing by, went into the house, plugged the vagina, and checked the hæmorrhage, and then had her sent to me. She is now perfectly recovered.

There is only one other point as to these intra-uterine tumours which I wish to speak of. Sometimes they are removed by nature. In one of these cases I found signs of a considerable tumour in the interior of the uterus, and I made arrangements for the removal of it. An appointment was made for the operation, and some friends were requested to join me. I happened to have a very fatiguing case the night before, and begged to be allowed to postpone the operation. It was accordingly put off. That night the lady had a rigor. The next morning her pulse was 150, and she was in high fever; and she remained in this state for a fortnight, and at its termination this mass was expelled. There was no return of hæmorrhage, and she went home to the country comparatively well, and the uterus greatly reduced in size.

The Vice-President, Dr. Bryne, said: He had never witnessed a case where a tumour was expelled by natural processes alone; but he had come across cases in the dissecting room where these intra-uterine tumours had undergone calcareous degeneration, and in which, if the patient had lived longer, the tumour would probably have been expelled. There was one great cause for satisfaction in respect to these tumours, that except they assumed the form of polypi, when the menopause occurred, the hæmorrhage caused by the tumour ceased. He had under his observation the case of a lady who was blanched with hæmorrhage, produced by a large fibrous tumour. She was several times on the point of death, but when the menopause came the hæmorrhage ceased.

Dr. Denham remembered a patient who was in the habit of coming to the Rotundo Hospital. She had a large fibrous tumour in the anterior wall of the uterus, and she came to the hospital suffering from retention of urine. They always drew off a quantity of healthy urine, and every month or six weeks the operation would have to be repeated; but why the retention came on at any particular period they could not tell. He believed she was still in the habit of going to the hospital, and the tumour was progressing slowly in its growth. There was one form of danger from these tumours in the substance of the uterus which had not been alluded to—the possibility of a woman thus affected proving pregnant. He remembered a lamentable case of that kind. A large, stout, healthy woman, thirty years of age, proved pregnant. Unfortunately for her there were several of these tumours imbedded in the body of the uterus. She had a tolerably healthy labour, and the child lived, but she died from flooding, it being impossible to produce contraction of the uterus.

He quite agreed with Dr. Kidd as to the inefficiency of plugging. He had very little faith in it. He thought they could not plug the os better than by putting in some pieces of sea-tangle, and applying nitric acid to the tumour itself. Spontaneous separation of the tumours was

a process they could not wait for. It was an event of such rare occurrence that no sane man would wait for spontaneous cure when his patient was suffering from repeated hæmorrhage. He had not the apprehensions Dr. Kidd entertained as to the preparations of iron.

Dr. Atthill bore testimony in favour of the steel wire, the use of which had been introduced into Dublin by Dr. Kidd. He considered it superior to any other material for performing *écrasement* they could possibly use in these cases. With regard to the point of attachment of these tumours he was not quite sure that he could accept the proposition that a tumour bulged out of the portion of the uterus opposite its apex, instead of the portion corresponding to its attachment.

He was not altogether in accordance with Dr. Kidd in respect to plugging. No doubt the most efficient way was to plug the os uteri by means of sponge tents, but that was difficult to do when the woman was bleeding rapidly. He preferred the cotton, and he had found it tolerably effective. He first introduced a piece of cotton saturated with perchloride of iron and glycerine, next, a piece saturated with pure glycerine, and next pieces that had not been saturated at all. When cotton did not succeed it was often because it was not properly employed. His objection to the sponge was threefold. First, the difficulty of introduction. The next objection he had was the horrible stench it caused. His third objection was the expense. With respect to the internal application of nitrate of silver, nitric acid, and perchloride of iron, he agreed with Dr. Kidd. The only severe case of pelvic cellulitis he had ever seen was brought on by perchloride of iron.

With respect to the effects of pregnancy and menstruation on these tumours, it was a matter of great importance. A woman, known to have a fibrous tumour, who was about to get married, consulted him as to the propriety of doing so. He gave a strong opinion against the advisability of that course. It was clearly proved these tumours enlarged much during pregnancy, and gave rise to very grave symptoms, endangering the patient's life.

Dr. Kidd said he might, had time permitted, have ventured to adduce some cases of fibrous tumours complicating pregnancy. He had seen two women die soon after labour from the effects of sloughing and disintegration of fibrous tumours in the uterus. He remembered another case. The students who attended her thought she had twins, and after waiting for some time for the second child, sent for him. To clear up the doubt that existed, he introduced his hand, and found a large fibrous tumour in the fundus of the uterus. He went back to see the woman occasionally, and on the fourth day he saw her up and washing clothes. Two months afterwards the uterus had gone back to its normal size. He had three times attended a lady who had a large mass of sub-peritoneal fibrous tumours, they lay high up in the abdomen, and never affected her labours, and he had, during a previous session, brought before them a case where a large tumour completely blocked up the brim of the pelvis and prevented the entrance of the head. In that case he succeeded in putting the tumour up into the abdomen by using one of Barnes' bags in the method he had alluded to in his communication.

Art. 248.—*On the Employment of Subcutaneous Injections of Ergotin in the treatment of Fibrous Tumours of the Uterus.*

By Dr. Hildebrandt.

(*Berliner klinische Wochenschrift*, 1872; *Gazette Hebdomadaire*, Nov. 27, 1872.)

Since Langenbeck practised injections of ergotin as a means of treating aneurisms, an example which has been followed by other surgeons, attempts have been made to apply this treatment in cases of hæmorrhage. MM. Ruben and Zente have directed attention to the good effects of injections of ergotin when applied in cases of menorrhagia and of metrorrhagia after delivery. Dr. Hildebrandt has extended the use of this method, and hopes that he has found in it a new means of treating fibrous tumours or liomyomata of the uterus. In order that one may appreciate the value of his very interesting attempts, we give a *resumé* of his report:—

The subject of the first case was a woman aged thirty-three years, who had been affected for three years with a tumour in the hypogastric region. This swelling was of about the size of the pregnant uterus at the seventh month. There seemed to be no doubt concerning the diagnosis, and the swelling was regarded as an intra-uterine liomyoma, that is to say, a fibrous tumour of the uterus. There were frequent and abundant hæmorrhages. Dr. Hildebrandt tried the injections of ergotin in the first place with the object of arresting the hæmorrhage, and also of facilitating the contractions of the uterine walls in order to set up by compression engorgement of the tumour, and its protrusion at the os uteri, where it might then become accessible to surgical interference.

The injections of ergotin were followed by a remarkable result. Dr. Hildebrandt administered daily for two weeks an injection under the integument of the abdomen over the tumour, employing a solution made up of 3 parts of ergotin, 7.5 parts of glycerine, and 7.5 parts of water, and using for each injection Pravaz's syringe. Menstruation then took place more regularly, and the discharge was less abundant, and attended with less pain than it had been previously. After the cessation of the menses, the daily injections of ergotin were renewed. The tumour then seemed to diminish week by week, and finally it disappeared. The treatment lasted over fifteen weeks—a result which was so unexpected led Dr. Hildebrandt to other attempts, an analysis of which he has published.

Case II.—The patient was affected with intra-uterine fibroma and with small sub-peritoneal fibrous tumours on both the right and left side. Menstruation was profuse, and there was also uterine catarrh. Injections of ergotin were made daily from the end of August to the end of November; the result, though not to be compared with that of the former case, was, however, favourable; the uterus certainly diminished in size, in consequence of shrinking of the intra-uterine tumour. Menstruation became regular, and the white discharge and uterine pains ceased.

Case III.—A woman, aged thirty-one years, had been troubled with menstrual disturbances since the age of sixteen. The menses had

sometimes continued from six to eight months. Anæmia and emaciation were well marked. The apex of the uterus had reached almost as far as the centre of the pubo-umbilical line. On digital examination a tumour could be felt in the anterior wall of the uterus. Daily subcutaneous injections of ergotin were made from January 17th to March 5th, 1872. When the patient was discharged menstruation had lasted but three days, and had been regular. The general condition of the patient had been much ameliorated, the uterus had diminished considerably in size, and most of the vaginal portion had regained its normal size.

Case IV.—A woman, forty-five years of age, presented an uterine tumour of the size of a child's head ; the pelvic cavity was filled by the uterus, and the vaginal portion of the diseased organ protruded between the labia. In November 1871 the vaginal portion of the cervix was amputated, and after the wound had healed, the injections of ergotin were commenced on April 15th, 1872 ; after thirty-six injections the uterus was found to be freely moveable, and so much diminished in size that one could apply with utility an annular pessary.

Case V.—The patient was forty-four years of age. The uterus was of a volume corresponding to that of the organ in the seventh month of pregnancy ; the swelling was very irregular, and on the right side had passed above the umbilicus and reached as far as the false ribs. The treatment was continued for 105 days, an injection of ergotin being made daily. There was considerable general improvement, and the fundus of the uterus sank considerably below the umbilicus.

Case VI.—The patient was forty-five years of age. The uterus reached as far as the umbilicus and was anteverted ; the anterior wall of the organ was occupied by a large fibrous tumour. The menstrual epochs were irregular and attended with much loss. In this case there was improvement after treatment ; the fundus of the uterus descended to a point about midway between the umbilicus and pubic symphysis.

Case VII.—The patient had suffered from profuse painful and irregular menstruation, and was anæmic and emaciated. The uterus was of the size of the pregnant organ at the fourth month. At a menstrual epoch, after the administration of ten injections of ergotine, a polypus of the size of a hen's egg presented itself at the internal orifice of the cervix ; but this, on account of the contracted condition of the cervix, could not be attacked. Twenty-four more injections were made. Menstruation became regular and free from pain, the uterus diminished in size and the polypus seemed to be smaller, less mobile, but not as yet accessible to the *écraseur*.

Case VIII.—In this case the uterus was as large as an organ at the ninth month of pregnancy. After six injections had been administered, symptoms of poisoning by ergotin came on—as vertigo, painful contractions of the limbs, constriction of the chest, nausea. After a cessation of the treatment for ten days, six fresh injections were made ; the symptoms of poisoning again appeared. A third attempt was also followed by similar affections. The treatment, which had produced no amelioration, was then discontinued.

As Dr. Hildebrandt remarks, ergotin administered by injection seems to be a powerful medicinal agent. In one case a tumour which had extended beyond the umbilicus, had disappeared ; in a second, a tumour which reached as far as the false ribs, descended to below the umbilicus, and in four cases where the treatment had been less complete, there was improvement in both the general and local conditions. It is a remarkable fact that ergotin rendered menstruation less irregular,

less abundant, less prolonged, and, above all, less painful. It is not easy to state precisely the mode of action of ergotin in these cases. It is probable that in consequence of the contractions produced by ergotin in the nutrient vessels of the tumour, and in consequence also of the compression in all directions by the contracting uterine walls, the nutrition of the tumour is interfered with, that then fatty degeneration and absorption take place. It is probable that intra-uterine tumours are more readily modified in this way than subperitoneal tumours, and myomata more readily than fibromata.

The solution of ergotin used in these cases is much less painful than that used by Langenbeck, which contains alcohol. These injections, states Dr. Hildebrandt, cause very little pain, and do not produce abscesses. The patient after each injection with this solution, may return to her home. The lower parts of the abdomen are more sensitive to puncture and injection than the parts around the umbilicus. At a menstrual period, and shortly before or afterwards, a discharge of blood from the seat of puncture is readily produced.

Art. 249.—*Treatment of Carcinoma Uteri.*

By Charles R. Drysdale, M.D., M.R.C.P., Physician to the Metropolitan Free Hospital.

(*Medical Press and Circular*, November 27.)

The amputation of the cervix uteri was formerly considered nearly an infallible remedy for cancer of the womb; and at present no internal medication is believed to possess any power over this frightful malady; so that the duty of the practitioner consists almost entirely in calming the agony and soothing the mind of the patient. This requires much kind attention and care. When cancer of the uterus has commenced by hæmorrhage, all sexual excitement must be sedulously avoided; aperients used, to prevent the accumulation of fæces, and rest should, if possible, be maintained. Gallic acid, in doses of ten grains, is an excellent hæmostatic, taken thrice daily. The tincture of the perchloride of iron may be used locally, to staunch bleeding, when this is excessive. The author has often found this practice useful. Confection of senna or castor oil are the best purgatives, and succeed better in most cases than enemata. Pills composed of five grains of camphor, and five of hyoscyamus, are recommended by West, to commence with, as anodynes. These, added to twenty drops of chloric ether and twenty of compound spirits of ether, will often solace the pain. Indian hemp and chlorodyne are useful. Laudanum is the best tolerated of all the preparations of opium. Suppositories and subcutaneous injections of morphia are very useful in some cases. The use of inhalations of chloroform is not to be much recommended in such cases, as in the great majority it causes such depression afterwards as not to be, on the whole, useful. In 1866, Dr. Greenhalgh said that the use of iodoform internally was sometimes successful in calming the pain in carcinoma uteri (*Br. M. Journal*, 1866). Démarquay, in 1867, used iodoform as a suppository with cacao butter, in the dose of seven grains. To destroy

the fœtor, West recommended an injection composed of half a drachm of nitrate of silver to the ounce, into the tissues. A weak solution of chloride of lime, or Condy's solution, is useful injected into the vagina several times daily. In advanced cases a drachm of creasote in a pint of water may be used. As to internal remedies, iron is the most useful. Five grains of the ammonia-citrate may be given. Vomiting may be attacked by giving the patient small pieces of ice to suck, or small quantities of effervescent liquids, or putting a mustard poultice on the epigastrium. Hydrocyanic acid is sometimes useful. In cases of cancer uteri, abortion is advisable at an early period of pregnancy, or premature labour may be brought on, otherwise incisions of the os uteri or Cæsarian section may be required.

Amputation of the cervix, which dates from the year 1802, when it was performed by Professor Osiander (who amputated the cervix in twenty-three cases) may occasionally be advisable. In some cases of cauliflower excrescence, the operation has proved quite successful; but it must be confessed that even in such cases the tumour is likely to return at no very distant date, although this is not quite *always* the case. The dangers from hæmorrhage during the operation are not so great as they used to be, when the écraseur was unknown; but they are still formidable, and peritonitis and phlebitis frequently put an end to the patient. Mayer, of Heidelberg, objects to the écraseur, as it implicates parts as the operation goes on, which were not thought of when it was commenced; and Marion Sims relates a case where the peritoneum was opened up by the écraseur in amputating a cauliflower excrescence. Dr. Braxton Hicks' wire écraseur is a great improvement on the chain of Chassaignac in this operation, and galvano-cautery is likely to be had recourse to for it in future. Dr. Gallard, of the Pitié Hôpital, of Paris, injects perchloride of iron into the thickness of the tissues in uterine cancer by means of a syringe of Pravaz; Dr. Broadbent, of London, at one time advised recourse to injections of very dilute acetic acid, but this practice was soon abandoned, as fatal peritonitis may arise in some cases. Probably actual cautery, whilst it is a good palliative in cancer, might prove successful in cases of the *hétéradénic* tumours of Cornil, or instead of using excision.

Art. 250.—*Report of a Case of Obstinate Procidentia of the Uterus cured by Actual Cautery.*

By Evory Kennedy, M.D., late Master of the Rotundo Lying-in Hospital.

(*British Medical Journal*, August 17.)

At the forticth annual meeting of the British Medical Association, Dr. Kennedy related the following case:—"Mary Burke, aged sixty, a widow with six children, had violent procidentia of the uterus, and could not retain any form of pessary. She suffered much distress; her general health was deranged; she was dyspeptic, and had lumbar pains. She was confined to the horizontal position, with the hips well raised, for a fortnight. The ulcers healed. The uterus was placed *in situ*,

and astringent injections were used. The actual cautery was then applied about an inch and a half from the vulva round the surfaee of the vagina for the extent of about half an inch. My clinical clerk, who was somewhat of the Gil Blas school in criticising his master, adds that the old woman was so indignant at this operation, which, for obvious reasons, it was deemed more considerate not to explain beforehand, that she left the hospital in a fit of indignation, because a hot iron had been applied to her inside, as she said, without saying 'With your leave or by your leave.' She eventually permitted the treatment to be followed up by the application of nitrate of silver; and the report is thus continued by my clinical critic. At the expiration of two months, she was able to go about again. The uterus was *in situ;* and she had derived much benefit to her general health and condition, and a distressing pain, descending down the front of the thigh, from which she had constantly suffered, had disappeared. The cicatrix formed by the eschar prevented the descent of the os. He adds, however, this caustic comment on my operation: 'She certainly got a regular touching up.'"

Art. 251.—*On Prolapsus Uteri.*

By Charles R. Drysdale, M.D., M.R.C.P.L., F.R.C.S.E., Physician to the Metropolitan Free Hospital, London.

(*Medical Press and Circular*, October 23.)

In cases where there is subinvolution of the uterus after confinement, it is the best treatment to confine the patient to her couch for a time, and then try to lessen the weight of the uterus; whilst in cases where there is rupture of the perineum, the uterus being of normal bulk, supports are clearly indicated. In all cases of inflammation and enlargement of the organs again, we must endeavour to treat the disease before having recourse to any other surgical procedure. Leeches to the uterus, or other means advised for the treatment of uterine catarrh, should be had recourse to, and all pessaries should be avoided, for a time at least. In all cases of procidentia, however, or in old cases of prolapse, when the uterus is healthy, or in ruptured perineum, or when great suffering results from prolapse, we must try the effect of supports; again, when the bladder or rectum are much prolapsed. Nothing is of more importance than the choice of a pessary or internal support in the treatment of any form of prolapse of the uterus. The air-ball pessary of Gaziel, or the air-ring are often useful. Zwanke's pessary has been much praised; but the author confesses to disliking it for many reasons. Hodge's horse-shoe pessary is useful, but in the author's opinion, the simple ring pessaries introduced by Dr. Graily Hewitt, are by far the best ever brought into practice. Hewitt's ring-pessary is merely a copper wire ring coated externally with gutta-percha, and of various diameters, which can be moulded into any shape the practitioner pleases, thus being suitable for all cases of anteversion, retroversion, and prolapse. Sponge pessaries should never be used. They become rapidly most horridly fœtid. As to stem-pessaries they are all difficult to

manage, and expensive, and the author cannot recommend any of them. Ashburner's pad is an admirable support in cases of rupture of the perineum and procidentia. The most important purpose served by all pessaries which prove of any service, is to keep the uterus motionless. Pessaries, if worn at all, should not remain more than a week at a time in the vagina, since ulceration of the vagina may occasionally be the result of the long stay of any instrument; and, another point is, that the very smallest size of pessary that will keep the uterus up should alone be used. In procidentia the parts should, as soon as possible, be returned into the pelvic cavity, and retained there by an Ashburner's pad, if the procidentia is of recent date, whilst the patient is kept in bed for some weeks, if possible. A few leeches may be useful to relieve the congested state of the organ prolapsed for some time. By attention to such wholesome rules, we may often succeed in causing the prolapse to cease, although the result is uncertain, especially when the prolapse has existed for a long time.

Art. 252.—*On Elongation with Prolapse of the Uterine Neck.*

By Dr. Guéniot.

(*Archives Générales de Médecine*, Juillet, 1872.)

From the cases and reflections contained in his memoir the author deduces the following conclusions:—

"1. In certain women there exists during pregnancy, and occasionally at the time of parturition, a special affection of the neck of the womb which generally passes unrecognised, and has not hitherto been the subject of any description.

"2. This affection may be designated under the name of *œdematous elongation with prolapse of the neck*, which indicates the principal constituent traits. Hyperæmia and turgescence of the organ, the arrangement of its cavity, which is transformed into a long and freely patent canal; the rapidity with which these symptoms may disappear, and the great facility with which they may be reproduced under certain circumstances, are all so many fundamental characters of the affection. Ulceration of the os tincæ, occlusion of the vagina, a thin and flaccid condition of the uterine walls, are also almost constant symptoms, as are also circumpelvic pains, a feeling of general debility and variable disturbances in micturition.

"3. The causes of this change in the neck of the uterus are complex; they are derived from two sources: certain anatomical dispositions of the organ, and various circumstances exerting upon it a prolonged mechanical action.

"4. Although very rare, œdematous elongation with prolapse of the neck is without doubt a less exceptional affection than one would be inclined to imagine. Many observers have erroneously assimilated it to hypertrophic elongation or to simple prolapsus, to which affections, in truth, it presents a great analogy, but from which it is essentially distinguished by proper and very important characters.

"5. This affection is a source of pain and inconvenience rather than of menacing danger to the mother; but to the child it is a serious condition, since it may compromise its health or even its life by inducing a predisposition either to premature labour or abortion.

"6. The suitable treatment for this affection is to return the prolapsed organ into the vagina, and to retain it when reduced by means of a plug and a bandage applied over the vulva. Rest in the horizontal posture, and the use of the proper remedies in case of cough or diarrhœa, are necessary ancillary means. The employment of pessaries being very dangerous during pregnancy, this ought to be strictly proscribed, and also any operation on the vagina or neck of the uterus. During labour the attendant should carefully watch the process, and hold himself ready for any accident. Finally, after delivery he should reduce the prolapse, and prescribe during the period of lying-in an exceptionally prolonged decubitus."

Art. 253.—*Post-partum Inflammation, and its Treatment.*

By Edward Montgomery, M.D.

(*St. Louis Medical and Surgical Journal*, February.)

The following case by Dr. Edward Montgomery, of St. Louis, is recorded for the purpose of illustrating the treatment followed:—

"Mrs. S., æt. thirty-seven, a primipara, taken in labour on the evening of January 20, 1869. A midwife was in attendance until 3 P.M. the next day, at which time the membrane ruptured, and a large loop of the umbilical cord protruded from the vagina. I was then sent for, and found about fifteen inches of the prolapsed cord in the vagina, the fœtal head still high up, and seemingly resting on the superior margin of the pubic bones. The labour pains had been very severe since their commencement, the patient appearing to suffer great torture at the region immediately above the pubis; the pains in this region being sharp and lancinating. Her pulse was quick, hard, and wiry, and there was considerable tenderness and fulness in the lower part of the abdomen, occasioned most likely, in great part, by retention of urine. I caused the patient to get up on her feet in the bed, then to stoop forward with her head down on the bed so that her pelvis was well elevated, when I had little difficulty in returning the cord over the child's head; I kept her in the same position until she had a strong expulsive pain, when the head entered the superior strait so as to prevent the egress of the funis again; she now urinated freely, and I thought I would have little more difficulty with the case, but I was mistaken, for although the pains continued for two hours with great violence, I believed that the child would not be born alive without instrumental assistance; so I administered a warm salt and water injection, which thoroughly emptied the rectum, and applied the forceps and delivered a healthy male child, weighing about nine pounds.

"The placenta came away without any trouble, and the sanguine discharge was normal, but the patient seemed feverish and irritable, the pulse still quick and wiry, and the abdomen tender on pressure. I wrote a prescription for five grains of the sulphate of ammonia, half an ounce

of gum arabic, and two ounces of spearmint water; of this solution the patient was to get a teaspoonful immediately, to be repeated every two or three hours if pained or very restless. I also prescribed twenty grains of the sulphate of soda in a tablespoonful of sweetened peppermint water to be given every three hours, and a piece of flannel saturated with turpentine and oil placed over the abdomen under the binder. I directed the room to be kept at an even temperature. I visited my patient early next morning and found her still feverish, that same hard, quick, wiry pulse, great thirst, anxious and restless, with much abdominal tenderness. The after-pains would come on very severe if the morphine was omitted for a longer period than two hours. I now ordered three drops of Norwood's tincture of *veratrum viride* to be given every hour and a half until the pulse came down to eighty, or until nausea ensued; the bisulphate of soda to be continued, the morphine also to be given in sufficient quantities to keep the patient easy, and the continual application of the turpentine stupes to the abdomen; and light nourishment. Although the patient had urinated, and the uterine discharge was free and natural, I injected a weak solution of chlorinated soda, warm, per vaginam.

"I visited the patient again in the evening, and learned that the medicines had been given regularly all day as directed; she had taken some seven or eight doses of the *veratrum viride*, and was now nauseated, and the pulse had lowered to nearly 80. I directed it to be omitted, but to resume its use if the skin became hot and dry, and the pulse became much accelerated. The skin was now moist, the thirst abated, and the abdominal tenderness not so great. I directed the continuance of the bisulphate of soda, and enough of the solution of morphia to ensure repose, and also prescribed five grains of quinine every three hours as long as the fever kept down. At my visit on the following morning there was still some abdominal tenderness with slight meteorismus, the pulse was eighty-seven, thirst not so great, and countenance more composed and placid. The skin had become dry and the pulse accelerated during the night, when two doses of the *veratrum* reduced the fever. The quinine and the bisulphite of soda, with an occasional dose of morphine, were kept up for the two or three following days, and the patient made a good and permanent recovery."

Art. 254.—*A Recto-Vaginal Fistula cured without an Operation.*

By G. F. Miller, M.D.

(*Transactions of the Wisconsin State Medical Society*, 1871, and *The Medical Press and Circular*, November 27.)

Dr. Miller, of Grand Rapids, relates the following case:—

"May 16th, was summoned in haste to see the only child (a girl) of J. F. L., æt. seven months. Her pinched features and sallow complexion gave me anything but a favourable impression of the disease, which the parents were pleased to call canker, and which had existed

for months previous in the form of aphthæ, and seemed to have travelled the whole length of the primæ viæ, evidently involving the structure in its pathway, as had been frequently evinced by muco-purulent evacuations. At this time there had been an evacuation from the rectum into the vaginal passage, which excited no little solicitude and anxiety. It was not until I saw the passage of the evacuations myself, that I was without doubt concerning this new and unnatural passage into the vagina. Upon examination, however, it was found that there had been actual ulceration through both intestinal and vaginal walls. The opening thus formed was quite small, there being *tormina* and *tenesmus* during each evacuation. Urine scanty and highly coloured, together with general prostration of the whole system. There are perhaps few questions in surgery which afford a better test of judgment, experience, and decision, than those concerning such cases as I now report. I confess I was much at a loss what course of treatment to adopt in this case. Positive directions were given, however, for a wet nurse to be had, the mother's milk being almost entirely destitute of nutriment, she having suffered for a long time previous with stomatitis, and her general health being quite precarious. The next and by no means least indication was yet to be secured, viz.—to close and keep closed, the unnatural passage into the vagina.

"One of the most important elements in the treatment of such cases is to be found in the great principle of rest, as carried out both in medicine and by an apparatus which will perfectly retain the parts in position and at the same time not interfere with the natural exit of urine. To secure the former an enema was ordered to be given once in three hours per anum, consisting of one-half ounce of the following preparation:—℞. Opii pulv., gr. x; gum myrrh, ʒj; ext. glycyrhiz. ℥ss; Venice turpentine, ʒjss; ol. anisi; persulph. iron, aa ʒj; aqua fontanæ, Oj. Mix and boil for one hour. The vagina was then packed with surgeon's lint, saturated with the following solution:—℞. Ol. olivæ; glycerine, aa ℥ss; carbolic acid, gtt. x. Mix. The lint thus saturated was applied and kept in place by compress, until after passage of urine, when it was removed and new dressings applied.

"17th. Evacuations less frequent; tormina and tenesmus subsided; packing was removed but once during the night; child very languid; no evacuations through the recent passage; continuation of above treatment was ordered.

"19th. Symptoms improved; evacuations from the bowels less frequent; urine very scanty; restlessness and some fever. Treatment continued, together with the following:—℞. Gelseminum; tinct. aconite root, aa gtt. v; spts. nitre, ʒj; syrupus; aqua fontanæ, aa ʒiij. Mix. Dose every three hours.

"20th. All the symptoms much improved. This same treatment was continued with gradual improvement of the symptoms until the 25th, when the enema was discontinued, and one drachm of castor oil given, which operated quite naturally, the same day. On the 26th the packing and all medicine were discontinued. The child continued to improve from the first."

Art. 255.—*Mammary Abscess and its Remedy.*

By Joseph R. Beck, M.D., Lancaster, Ohio.

(*Canada Medical Journal*, June.)

As soon as there are any symptoms that mammary abscess is likely to occur, Dr. Beck has found the following prescription of service: Alcoholic extract of belladonna, four drachms; glycerine a sufficient quantity to mix them to the consistency of a moderately thin paste. This is to be spread in a medium thick layer with a spatula, over and upon both mammary glands, from the sternum to the axilla. Cover with a cloth dipped in olive-oil, and this in turn with oiled silk. Allow the dressing to remain undisturbed during a variable period of from two to three or four weeks, inasmuch as it can be worn by the patient for any length of time without inconvenience.

Art. 256.—*Local Uses of Tannin in Prolapsus Uteri.*

By G. P. Hachenberg, M.D.

(*New York Medical Record.*)

Dr. Hachenberg reports in the *New York Medical Record* several cases of the use of this remedy in prolapsus uteri, where other means had failed to afford relief. His method is as follows: A glass speculum is introduced into the vagina so as to push the uterus into its place. Through the speculum a metallic tube or syringe, with the end containing about thirty grains of tannin, is passed. With a piston, the tannin is now pushed against the uterus, the syringe withdrawn, and the packing neatly and effectually completed, with a dry probang, around the mouth and neck of the womb. After the packing is completed, the probang is placed against the tannin, in order to hold it, and the speculum is partially withdrawn. The packing is now fully secured and the instrument removed.

The application of tannin holds the uterus firmly and securely in place, not by dilatation of the walls of the vagina, but by corrugating and contracting its parts. At first, the applications may be made weekly, finally but once or twice a month. It not only overcomes the hypertrophy and elongation of the cervix, but even, the writer thinks, induces a slight atrophy of the parts. As a remedy for leucorrhœa, where the seat of the inflammation is at the mouth of the womb or within the vagina, it actually gives speedy relief.

Art. 257.—*Two Cases of Puerperal Arthritis.*

By Evory Kennedy, M.D., late Master of the Rotundo Lying-in Hospital.

(*British Medical Journal*, August 10.)

Dr. Kennedy places on record the two following cases:—

Case I.—*Puerperal Arthritis: Erosion of Cartilages of Elbow, Hip, and Ankle Joints.*—Kenny, three weeks delivered after a difficult and protracted

labour, was wakened from sleep in the night by an acute pain in the left groin. In the morning she observed a swelling in the middle of the thigh, which at the end of two days had completely engaged the entire limb. The pain became less acute as the swelling increased, but never entirely subsided. Some days subsequently to the swelling of the thigh, she was seized with violent pain in the elbow, but did not perceive any swelling. All these symptoms progressively increased, notwithstanding frequent leeching, stuping, poulticing, opiates, and mercury. She was admitted into hospital on January 28th, 1829; and on the 30th there was an obscure sense of fluctuation over the outer third of the thigh. An incision was made into it, but no pus followed. On February 3rd she had a severe rigor; and on the 4th she died comatose. A *post mortem* examination was made twelve hours afterwards. The cellular tissue throughout the entire thigh was filled with gelatinous lymph. An extensive abscess extended from nearly one extremity of the thigh to the other, between the periosteum and muscles. The muscles were pale and flabby, and appeared much softer than natural. About one inch of the upper part of the femoral vein contained pus; its inner tissue was vascular, but did not appear to have lymph upon its surface. The synovial membranes of the hip, knee, and ankle joints were filled with puriform matter. The cartilage covering the bones of the hip appeared healthy; whilst that covering those of the knee and ankle was in part removed by absorption, particularly in the ankle, where scarcely a trace of cartilage could be detected. The uterus was vascular, and inclined towards the left side. The lymphatic glands along the iliac vein were enlarged and vascular. The cartilage was removed altogether from the extremities of the bones forming the right elbow-joint. The viscera appeared healthy.

Case II. — *Puerperal Arthritis: Sterno-clavicular Articulation and Buttock engaged: Recovery.*—Keating was delivered in November 1837 of a still-born child, after a labour of thirty-five hours. There was some sloughing of the vagina, but not considerable, with a good deal of tympanitis of the abdomen, and irritation, which were relived by turpentine followed by opium. On the eleventh day there was an erysipelatous state of the right elbow, which had been, she stated, painful three or four days previously. She was treated with nitrate of silver locally, and sulphate of quinine with hyoscyamus constitutionally. On the twelfth day she was attacked with erysipelatous inflammation of the left buttock (the elbow having become improved), which was also treated with the caustic and with quinine. On the sixteenth day there was an appearance of pointing in the buttock, and an eschar was made with potassa fusa. There was this day noticed some tenderness in the right iliac region. On the seventeenth day she complained of the left sterno-clavicular articulation, which was swollen, red, and painful; it was scored with caustic, the other treatment was continued, and wine was given. On the twentieth day a fresh eschar was made on the buttock, through the slough consequent on which a lancet was passed on the twenty-ninth day, giving exit to matter of a healthy character. The swelling of the sterno-clavicular articulation continuing, with decided fluctuation and uterine pain, there being present also great constitutional disturbance, an opening was made on January 11th 1838, and exit given to healthy pus. She gradually improved after this, and left the hospital. There still remained some swelling, but the opening had healed.

Art. 258.—*On the Treatment of Puerperal Eclampsia.**

By A. B. Steele, Liverpool.

(*Medical Times and Gazette*, August 24.)

The object of the paper was to show that the treatment of puerperal convulsions must be based upon a pure system of eclectism. In plethoric conditions of the system, free general depletion was essential. The amount of blood to be taken depended, not, as has been laid down by authors, upon the severity or frequency of the paroxysms, but upon the state of the circulation in the intervals. In an overloaded state of the vascular system, bloodletting had a directly sedative action on the spinal centres; while in an anæmic state of the system it only increased the mischief, by adding to the already augmented spinal irritability due to anæmia. Bloodletting in suitable cases had a twofold action—curative in its action on the spinal cord, preventive in its action on the brain, preserving that organ from the injurious effects of pressure liable to result from the continued pressure during the paroxysms. Convulsions had been attributed to cerebral congestion, but Dr. Marshall Hall has shown that no cerebral disease can produce convulsions, which are exclusively a lesion of the true spinal system, although congestion or fulness of the cerebral vessels may indirectly cause convulsions by counter pressure on the medulla oblongata. In uræmic convulsions, bloodletting acted also as an eliminant, by removing at once and directly an appreciable quantity of the poisoned fluid. Manual dilatation of the cervix and immediate delivery has been recommended as a universal rule, on the ground that the uræmic condition was speedily fatal—first to the child, and then to the mother. That this is a fallacy is shown by the fact that convulsions often persist for a long time after delivery, and, further, sometimes cases terminate favourably both to mother and child after some hours' duration; besides, uræmia is not a constant condition in this affection. Early delivery, while proper in certain conditions, is hurtful in others, by adding to the already exalted excitability of the reflex system. Statistics have shown that the mortality is less when labour is not artificially hastened. The author attributed the death of the child to violent uterine action rather than to uræmia, and the maternal deaths were chiefly referable either to exhaustion or secondary cerebral mischief. Chloroform was most valuable under certain conditions, but could not supersede the necessity for depletion in cases of extreme vascular fulness.

Art. 259.—*Nitrite of Amyl in Puerperal Eclampsia.*

By William F. Jenks, M.D.

(*Philadelphia Medical Times*, August 1.)

Dr. Jenks narrates a case of this affection, which was immediately and satisfactorily overcome by the inhalation of nitrite of amyl.

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* Read before the British Medical Association.

Art. 260.—*On a Case of Pelvic Hæmatoma, or Retro-uterine Hæmatocele; with Remarks, especially as to the Source of the Hæmorrhage.**

By Snow Beck, M.D.

(*The Lancet*, October 26.)

A woman, aged forty, who had suffered from considerable dyspeptic symptoms, with severe hæmorrhoids, who had never been pregnant, and in whom the catamenia had always been profuse, suffered during the periods for the last two or three years from severe pain in the left iliac region. During the last period this pain had been very severe; it suddenly ceased, and a few minutes afterwards an oval lump resembling a duck's egg was perceived, firmly pressed against the abdominal wall in the left hypogastrium. This was the uterus. A soft elastic swelling existed between the uterus and the rectum, bulging forwards the posterior wall of the vagina, and presenting a soft depression directly behind the orifice of the uterus. No constitutional symptoms followed, nor anything to indicate inflammatory action. On the seventh day some dark-coloured clots and port-wine coloured blood passed with a gush from the rectum; the swelling gradually subsided, and the patient gradually became well. It was concluded that an effusion of blood had suddenly taken place amongst the loculi of the pelvic fasciæ, probably from the rupture of a congested pelvic vein. The sources from which the blood came in pelvic hæmatoma were considered to be (*a*) rupture of an ovary which had previously undergone some process of degeneration; (*b*) rupture of a Fallopian tube, or the escape of blood from the congested vessels of this part, in which cases the blood would be effused into the cavity of the peritoneum; and (*c*) rupture of some varicose veins. When the vein was situated in the broad ligament the blood might be effused into the pelvic cavity or into the subserous cellular tissue. When the vein was situated in the pelvis the blood was effused in some of the loculi formed by the pelvic fascia. The reputed source of the blood by regurgitation from the uterus through a Fallopian tube, consequent upon some disorder of the menstrual function, was considered highly improbable; and the cases upon which this opinion was founded were closely examined. There was no evidence of this in any of the cases collected by Bernutz and Goupil, except where there was permanent obstruction to the outward flow of the catamenia, and consequent distension of the uterus. And the evidence was equally unsatisfactory in the twenty-seven cases recorded by Dr. Barnes. Some of these cases, with the remarks upon them, were closely examined. In the treatment it was considered unnecessary to interfere where there were no constitutional symptoms, and the effused blood was evacuated by the rectum or the vagina in a short time. But when this fortunate course did not occur, as a general rule it was desirable to procure the artificial evacuation of the effused blood,—when some weeks had elapsed without any signs of decrease in the swelling, when the swelling became

* Read at a Meeting of the Obstetrical Society of London.

more tense, more tender, and more painful, and when the temperature increased, the complexion became of a dirty-yellowish hue, the abdomen swollen and tense, when there were repeated shiverings, vomiting, rapid pulse, &c., the evacuation might be effected by a curved trocar passed in towards the centre of the swelling, or by free incision into the tumour. As a rule, the rectum was to be preferred to the vagina as the place for the artificial evacuation.

Art. 261.—*Pelvic Peritonitis and Peri-uterine Cellulitis.*

By James L. Brown, M.D., of New York.

(*American Journal of Medical Sciences*, July, 1872.)

Dr. Brown says that while these affections are far more common than has generally been supposed, they are by no means so frequent as Courty estimates, who stated that they constituted about one-third of all uterine ailments. Of more than four thousand recorded cases of uterine disease, he is sure that the relative proportion of cases of this kind that can be diagnosticated does not exceed one in ten.

The causes of these affections are chiefly these: Parturition or abortion, endometritis or ovaritis, operations, or injuries, escape of fluid into the peritonæum, exposure to cold, gonorrhœa.

The principal diseases from which they are to be differentiated are: Hæmatocele, fibrous tumours, uterine deviations, displacement and fixation of the ovary, fæcal infarction.

His records show that out of forty-nine cases of cellulitis, eleven followed labour or abortion, five were consequent upon operations, and in the remaining thirty-three the cause was either not known or not ascertained. Of sixteen cases of peritonitis five were due to labour or abortion, four to operations, and the other seven to causes not known or not stated. Ten of the cases of cellulitis and six of peritonitis occurred in nulliparous women. In regard to prognosis, so far as danger to life is concerned, there is, in most cases, nothing to be apprehended. Functional derangements of the ovaries, uterus, bladder, and rectum persist for a variable period, which is generally much less in cellulitis than in peritonitis. All evidences of cellulitis may pass away in a few weeks, but the signs of peritonitis, unless removed by pregnancy, generally remain for years.

Art. 262.—*Treatment of Pelvic Peritonitis and Peri-uterine Cellulitis.*

By James L. Brown, M.D., of New York.

(*American Journal of Medical Sciences* and *New York Medical Record*, September 16.)

Dr. Brown observes, in regard to the treatment of these affections, that the acute stage should be treated on general principles; anodynes, local depletion, fomentations, and sedatives are the chief therapeutic agents. After this stage has passed, the most efficient means of causing the absorption of the products of inflammation are, for both affections,

successive fly-blisters over the hypogastrium, and the copious use of the warm vaginal douche every night and morning. The best apparatus for this is a keg that will hold two or three gallons, having an india-rubber tube attached to the stopcock. This keg, being filled with water as warm as the patient can bear, is placed upon a shelf ten or twelve feet high; the patient being suitably arranged on a lounge or chair underneath, the free end of the tube is introduced high up in the vagina, and the water allowed to flow in a constant stream against the pelvic roof and the neck of the uterus. The rapid improvement that follows the use of these means in the majority of cases is astonishing even to those who have had much experience in the use of them.

The whole number of cases of which he has kept a record is eighty-seven. Of these, however, twenty-two are so incomplete as to be of very little value. The remaining sixty-five give the following results:—

	Cellulitis.	Peritonitis.
Whole number of cases	49	16
Acute cases	9	7
In married women	44	13
In single women	5	3
In nulliparous women	10	6
Tumour on right side	17	1
Tumour on left side	28	1
Tumour on both sides	4	14
Following labour or abortion	11	5
Following operations	5	4
Cause not ascertained	33	7
Resulting in suppuration	3	1

ART. 263.—*On the Internal and External Orifices of the Uterus: their Anatomy, Physiology, and Pathology.**

By J. HENRY BENNET, M.D.

(*Medical Times and Gazette*, August 24.)

Dr. Bennet commenced by stating that, owing to the non-recognition of some important facts connected with the anatomy and physiology of the orifices of the uterus, which he pointed out twenty-four years ago, in the second edition of his work on "Uterine Inflammation," practice continued in a chaotic state as regarded the pathology and treatment of these orifices. Thus, some practitioners, following the example of the late Sir James Simpson, constantly saw stricture of the os uteri internum in varied morbid uterine conditions, and divided it in a routine manner; whereas other practitioners, of whom Mr. Marion Sims was an illustrious example, in exactly the same class of cases, all but ignored stricture of the os internum, and divided the os externum, along with the cervix uteri, down to its vaginal attachments. Thus, the practice

* Read before the British Medical Association.

of one class of practitioners was negatived by that of the other. He himself still thought that they were both wrong—pathologically and surgically — in a very large proportion of the operations performed. Anatomically, the uterus presents two cavities—that of the body of the uterus, and that of the neck. The larger cavity—that of the body—was separated from that of the neck by a vital sphincter, formed by the circular fibres of the cervical structure. There was not a distinct demonstrable sphincter, like that of the anus, but the circular fibres of the cervix exercised the functions of a sphincter, vitally closing the uterine cavity. It was worthy of remark that all the large cavities had sphincters. This vital contraction of the os internum resisted the introduction of a sound in the healthy female, although it yielded to the gentle pressure of a small wax bougie, previously warmed. Thus the non-passage of a sound, on examination, was the natural healthy state, and not the sign of a stricture requiring operation. An open patulous condition of the os internum, on the contrary, implied in most cases inflammatory disease, or morbid aggrandisement of the body of the uterus. Dividing the os internum in these cases, was, generally speaking, mere interference with a healthy normal anatomical state, and not justifiable. This vitally closed os uteri relaxed evidently during menstruation, as it also probably did for conception. In some exceptional cases, however, of congenital or pathological dysmenorrhœa, or in pseudomembranous dysmenorrhœa, the os internum did require dilatation or division. The os externum, although less vitally contracted, was normally closed; and if a good-sized bougie could enter with ease, its division down to the vagina was not justifiable. He did not see how the surgical production of one of the accidents of labour—laceration of the cervix—could cure dysmenorrhœa, sterility, &c. He thought these anatomical points should be definitively settled, as a necessary guide to practice.

Art. 264.—*On Puerperal Septicæmia.*

By M. A. D'Espine.

(*Archives Générales de Médecine*, Octobre, 1872.)

1. Puerperal septicæmia is constituted by a series of symptoms more or less severe according to the dose of septic material absorbed by wounds on the walls of the utero-vaginal canal.

2. These symptoms present nothing that is special to the puerperal condition, and may be assimilated to those which are caused by septicæmia in wounded subjects and in animals.

3. The starting point is always in the uterus or vagina; all the causes which prevent cicatrization of the uterine wound and which favour the development of septic materials on its surface, are efficient causes of puerperal septicæmia.

4. The lymphatics are the habitual road of the absorption of the poison; lymphangitis is the usual but not a necessary indication of its passage.

5. *Peritonitis* is an associated lesion due to the transmission of septic

material by the uterine lymphatic vessels; it may be compared to local inflammations which are developed around infected wounds.

6. The effect of septic absorption on the organism is to determine congestions and inflammations in all organs, especially the lungs, kidneys, and intestines; subserous ecchymoses or interstitial apoplexies, internal or external inflammations localized by preference in serous membranes; *during life* this action is manifested by fever, diarrhœa, pulmonary congestion, epistaxis, and often by temporary cutaneous eruptions.

7. Purulent absorption and septic absorption may be confounded by the bedside.

8. There is no such affection as milk-fever; the fever of the first week is almost always a slight septicæmia due to an absorption of the lochia by small wounds on the walls of the utero-vaginal canal. When the uterus does not contract and the lochia remain fœtid, this fever may persist for some weeks. In cases of this kind one may almost always find ulcers in the neck or vagina.

9. These slight infections are often, but not always, accompanied by uterine angioleucitis and signs of mild perimetritis. When the infection is prolonged it may lead to consumption and death (septic phthisis).

10. Puerperal *pyæmia* is a complication of septicæmia, and almost always coincides with suppuration in the veins of the uterus.

This complication, which is relatively rare, is due in all probability to septic emboli.

Visceral metastatic abscesses are tributary to this, whilst all inflammations of the cellular tissue and of the articulations are due to lymphatic infection, and are not embolic in their nature.

Art. 265.—*Local Treatment of Leucorrhœa.*

By D. M. Clay, M.D.

(*American Practioner*, August, 1872.)

Dr. Clay advocates in this disease the process of irrigating the vagina and cervix, twice a day at least, with the "fountain" (recommended by Scanzoni), or "Davidson's" syringe. In no case where it is not positively contraindicated would he suggest less than one gallon of warm water. He infinitely prefers the warm to the cold, in consequence of there being no shock or reaction afterward, two very important considerations in the treatment of uterine disease. After each irrigation is finished, the parts are in a condition to receive medication, either in the form of ointment, solution, or solid. He generally prefers the solution holding some of the preparations of iron, for instance, ferri iodidi, ℈j; aqua pura, ℥viij; or ferri sulph. in same proportions. Argent. nitrat., cupri sulph., potass. iodidi, potass. chloratis, and the vegetable astringents, are all excellent remedies for this purpose. After the cervix has been thoroughly exposed there will frequently be observed a thick, glairy, tenacious mucus plugging the os, which will require for its removal some effort on the part of the operator. This is best accomplished by using small pieces of cotton, attached either to a sponge-holder or a

long delicate pair of forceps. The parts being in a condition for the application of remedies, he usually then uses chromic acid dissolved in water, one part of the former to two of the latter. While on the probe or sound, the cotton is saturated with the chromic acid solution, and introduced gently into the cervical canal, fully one and a quarter inches, and allowed to remain only a few seconds. This application should not be repeated oftener than every six or eight days, and not then unless positively indicated. When the discharge proceeds from the cavity of the uterus, either from the body or fundus, he has found the acid nitrate of mercury invaluable for its relief, but great care should be taken to see that the os and cervix are well dilated before recourse is had to this remedy. His plan is to saturate a small pledget of lint or cotton with the acid nitrate of mercury, and fasten a delicate string around it, so that it can easily be withdrawn, and gently introduce it to the fundus, allowing it to remain for six or eight hours, and then remove it. Repeat this once or twice weekly for two or three weeks, and the result will be most satisfactory.

Art. 266.—*Treatment of Menorrhagia.*

By Chas. R. Drysdale, M.D., M.R.C.P.L., F.R.C.S.E., Physician to the Metropolitan Free Hospital, London, and to the North London Hospital for Consumption and Diseases of the Chest.

(*Medical Press and Circular,* October 2.)

With regard to the treatment of menorrhagia in cases where there is debility and atony of the system the use of hygienic remedies, change of air, and cold bathing will often effect a cure. Hydropathy and sea-bathing are often admirable remedies in such cases. In cases where excessive lactation is accompanied by menorrhagia, cessation of lactation will sometimes of itself cure the patient. Lead-poisoning should be treated by iodide of potassium in ten-grain doses, and the patient cautioned to abandon work for a time at any rate. When the cause resides in a plethora of the abdominal viscera, the patient must live very temperately and take saline purges, such as a drachm of the sulphate of magnesia with ten grains of nitre occasionally in an ounce of peppermint-water. In a vast number of cases of atony of the system and flabby condition of the uterus, the author has found no remedy equal to that of the tincture of the perchloride of iron, in doses of twenty to forty drops in an ounce of water. In severe cases, the patient should keep in bed or recumbent at menstrual periods, and should take a brisk purge. In cases of inflammation of the uterus, accompanied by menorrhagia, leeches to the cervix uteri are often of much service, according to some, just before the menstrual epoch, with drachm doses of Epsom salts in a mixture with eighteen drops of dilute sulphuric acid and an ounce of cinnamon water, taken occasionally. Menorrhagia is far more commonly united with debility than with plethora, and, in addition to perchloride of iron, alum, gallic acid, tincture of digitalis, and even lead, have all gained some reputation as astringents in such

cases. Matico is used by Tyler Smith. Tincture of digitalis may be given in ten-minim doses; alum in ten-grain doses; gallic acid in doses of fifteen grains; or an infusion of the leaves of piper angustifolium matico may be used. Many practitioners are loud in their praises of ergot of rye in *passive* menorrhagia. The most simple preparation of ergot in the infusion, but a preparation of Mr. Long, of Dublin, is described by Dr. W. Curran and others as being most efficacious. The liquid extract of ergot of the British Pharmacopœia may be given in twenty-minim doses, alone, or combined with perchloride of iron. Digitalis has been found by Dr. Robert Lee to be a powerful means of arresting menorrhagia in some cases. Two drachms to half an ounce of the infusion of digitalis many say may be given as a dose, taking care not to continue this treatment long. It seems that digitalis acts by causing contractions of the fibres of the uterus, just as ergot does. Trousseau, of Paris, repeated some experiments of Lee and Dickinson on this point with success, but disapproved of the large doses used in England.

In very bad cases cold enemata may be of service occasionally, used twice daily, with frequent washing of the vulva, &c. with cold water. Astringent injections into the vagina are also useful, and infusion of matico may be used for this purpose. As a last resource the vagina or the uterus may be plugged, or injections may be made into the uterus. The speculum may be used for plugging the vagina, which may be done by means of lint dipped in solution of perchloride of iron. The injection of a solution of gallic acid in the proportion of twenty grains to the ounce of water, or the tincture of iodine, have both been recommended in cases of dangerous menorrhagia by West, Routh, and others. Dr. Avrard, of Paris, in a pamphlet written in 1867, recommends the use of a doubled-barrelled sound where such injections into the uterus are required. The main point is that they should only be used in desperate cases, and tents, to dilate the os uteri previously, are of great service in such cases. Transfusion has been used lately by Dr. R. MacDonnell with great success.

Art. 267. — *Treatment of Dysmenorrhœa.*

By Chas. R. Drysdale, M.D., M.R.C.P.

(*Medical Press and Circular*, October 2 and 9.)

Painful menstruation is supposed to arise from three main causes—neuralgia, congestion, and mechanical stoppage to the outflow of the blood. In neuralgic dysmenorrhœa, hot baths of half an hour are very useful, conjoined with rest in a warm bed, or sofa; and etherial draughts (such as twenty drops of spiritus ætheris compositus, with twenty of spirits of chloroform in an ounce of camphor julep), or sal volatile may be used; or sumbul, in doses of three grains, or hyoscyamus in doses of five grains of the extract. Indian hemp, or the inhalation of chloroform or ether, are rather heroic remedies. Morphia may be taken in half-grain doses, either by the stomach, or, better still, as a suppository.

M. Bernutz, of Paris, praises the extract of hemlock in dysmenorrhœa. The root freshly powdered may be given in doses of four grains, or the succus conii may be used. Bromide of potassium has been much praised by Raciborski in doses of from five to ten grains. Lupulin is often used, in doses of four grains. In cases of congestive dysmenorrhœa the application of leeches to the cervix uteri is often useful. Four or five leeches, put up to the cervix uteri by means of a glass speculum, are all that are requisite; or the uterus may be scarified by a long knife, just as is done in ophthalmia neonatorum. Hot water bottles (those of galvanized india-rubber are best) may be laid over the hypogastrium, and the bowels kept free by enemata, or doses of Epsom salts. As to the rare cases of extremely small os uteri, these are usually accompanied by an undeveloped condition of the uterus. To assert, as Dr. Marion Sims does, that the treatment of the majority of uterine diseases should be surgical, seems to the author to be absurd in the highest degree. According to that gentleman, who advises incision of the cervix more than even Dr. Simpson or Mr. Spencer Wells, this operation produces surprising and salutary effects in dysmenorrhœa, which, in his eye, is always mechanical. Incision may give rise to fatal hæmorrhage, according to Dr. Kidd, in the Dublin Obstetrical Society, 1866. And Dr. Gream, of London, says, that the division of the cervix sometimes brings on either a consecutive relaxation, which is prejudicial to gestation, or a scar. Dr. Barnes, in cases of conical cervix, divides the external os uteri, whereas Drs. Greenhalgh and Rough say that in the great majority of cases the stricture is at the internal os uteri. In France and in Germany there are but few who agree with the practice of Sims, Greenhalgh, and Routh in this point. The uterus may suffer terribly from these heroic practices, and abscess in the pelvic cavity may arise from them, according to West and others. The introduction of the uterine sound, or of various sizes of sounds may sometimes do much good in mechanical dysmenorrhœa, and the use of tents of laminaria digitata is often indicated, until the uterus is large enough to let enter a sound of the size of a No. 9 catheter. The hysterotomes of Simpson, Greenhalgh, or Mathieu, are only required in cases of cicatrix after laborious confinements.

(c) CONCERNING THE DISEASES OF CHILDREN.

ART. 268.—*Cases of Hydrocephalus Treated with Bromide of Potassium.*

By JOHN BRUNTON, M.A., M.D., L.F.P.S.G., Fellow and Councillor of the Obstetrical Society, London.

(*Glasgow Medical Journal*, November, 1872.)

The *rationale* of Dr. Brunton's treatment is this, that in acute or chronic hydrocephalus there is a certain amount of irritation, or inflammation of the brain and its membranes; that, of course, with this irritation there is increased vascular (blood) supply; that the arteries carry more blood to the brain and its membranes than the veins are

capable of returning; then the result is effusion and its products. It occurred to the author that if he could give some medicine whose power consisted in diminishing the supply of blood to the head, he would thereby overcome the effusion itself, the continuance of that effusion, and the tendency thereto, and absorb the products. That medicine Dr. Brunton believes to be the bromide of potassium, and the results he thinks, bear out his idea.

Art. 269.—*Headache in Children.*

By W. H. Day, M.D., M.R.C.P.

(*British Medical Journal*, Nov. 9.)

At a meeting of the Harveian Society of London, October 17th, Dr. W. H. Day read a paper on "Headache in Children." After some remarks upon the symptomatic value of headache as a term, the author glanced at the commonest varieties of headache in childhood, and then dwelt especially on a peculiarly functional form of which numerous examples had come under his notice. These were doubtless associated with some intricate change—physical, structural, or chemical—which may not be capable of detection, but going on within the cranium, giving rise to some confusion or abnormal sensation in the head, or to actual headache. This peculiar cerebral change is accompanied occasionally, but not of necessity, with some enlargement of the head and wasting of the extremities—the muscles become flabby and the joints loose; also there are pallor and debility, restlessness by night, irritability by day, a slow and sometimes irregular pulse, with dull and persistent headache. The temperature is normal. Dr. Day noted in treatment of these cases the value of bromide and iodide of potassium in the early stage; tonics, iron, and bark, with cod-oil being inappropriate till later, when they aid the cure.

Art. 270.—*On the Use of Hydrate of Chloral in Cases of Hooping-Cough.*

By Dr. Karl Lorey.

(*Deutsche Klinik*, 46. 1871; *Schmidt's Jahrbücher*, No. 3, 1872.)

The author, who is physician to the Children's Hospital at Frankfurt, commenced his observations in May, 1871, when the first instances, of an epidemic then prevailing, appeared at this institution. Of a mixture containing one part of hydrate of chloral to thirty parts of water and three parts of syrup, from one to three teaspoonfuls was given daily, according to the age of the child and the severity of the affection. This agent was administered on the first appearance of decided paroxysms, and was continued until the cough had nothing more than a catarrhal character. The daily quantity of hydrate of chloral varied in different cases from 0·25 to 1· gramme.

Fifteen children were thus treated by Dr. Lorey; some of these had been admitted between one and three weeks after the commencement of the hooping-cough, others had caught the affection in the hospital. The author had also administered the hydrate of chloral to a number of children in private practice. In all these children the ages varied between one and eight years, some of them had been healthy up to the commencement of the hooping-cough, others had been very scrofulous. The results of these observations, which were carried on for four months, are given in the following propositions.

1. The medicinal agent was well tolerated by all the children and did not give rise to any kind of disagreeable result.

2. In the course of a few days the severity of the paroxsyms had much diminished and they were less frequently followed by vomiting; their frequency also was much reduced, and seldom more than twelve attacks were noted in twenty-four hours.

3. The patients during the night were almost free from disturbance through paroxysms of coughing, and after an attack, when one did occur, the child rapidly went to sleep again.

4. The duration of the convulsive stages was remarkably short, especially in those cases which Dr. Lorey was enabled to watch from the commencement of the affection; in the hospital cases it lasted from ten to twenty-one days.

Art. 271.—*Chloral Hydrate in Pertussis.*

By Brynbery Porter, M.D., Physician to the New York Free Dispensary for Sick Children.

(*New York Medical Journal*, July.)

Dr. Porter thus sums up his experience of chloral hydrate in pertussis, as exhibited at the dispensary :—"I am fully convinced of the marked effect of chloral hydrate in alleviating the symptoms of pertussis, and that there seems to be some evidence (though my number of cases is certainly very limited) to show that it has a positive effect in cutting short the disorder. It is the only remedy I have employed in this affection at the Children's Dispensary for some time."

Art. 272.—*The "Open Air" Treatment of Hooping-Cough.*

By Daniel Maclean, M.D., L.F.P.S.G.

(*Glasgow Medical Journal*, November.)

The method of treatment which Dr. Maclean advocates is called the "open air" treatment of hooping-cough; that is, in the treatment of any case of hooping-cough, to keep the little patient, as much as circumstances will admit, in the open air, in contradiction to the advice of authors on the treatment of this disease, where the contrary is recommended; as, for example, Dr. Smith in Reynolds's "System of Medicine," who says, the patient should be kept at a temperature of 64°, and that

the body should be kept perfectly quiet. Sir Thomas Watson also says, that "the patient in cold weather should be confined to an equable temperature, or protected by warm clothing, and care should be taken to keep the air equable. The air in the bedroom should not be colder than that in which the child has passed the day. It should not be much above, nor much below, 60° Fahrenheit." Other authors are equally plain and full in directing that the patient should be kept within doors; some of them indicate all seasons of the year. The full benefit of the "open air" plan can only be obtained by directing the patient to be out of doors, whatever the weather may be. Dr. Aitken recommends change of air only as a last resource, when all other remedies fail; whereas, the "open air" treatment must be begun from the first. From its early use, we are less likely to require change to the sea-side towards the termination of the complaint.

The pathology of the disease sufficiently explains the action of the mode of practice Dr. Maclean wishes to introduce. The great characteristic of pertussis is the violent and recurring spasmodic cough, which differs distinctly from the cough depending on irritation of the bronchial tubes, in so far as we have no local irritant in this disease, but depends on causes, we believe, totally separated from the lungs. Whatever the primary cause of the cough may be, it comes on in a completely healthy condition of the lungs. Dr. Aitken says, and in this opinion the author agrees, that "inflammation is not necessarily found, although a state of the mucous membrane exists by which it is morbidly irritable or susceptible to impressions." By the recurrence of the cough, the lungs soon lose their normal state, and changes are induced which are not only caused by, but, when formed, also excite this peculiar spasmodic cough. We have thus an accumulation of material which acts as a local irritant, and is superimposed on the specific irritant of the disease.

The parts of the lung in which we are at present most interested are the ultimate divisions of the bronchial tubes, and the air vesicles themselves. The constant expansion of the cells at each inspiration, and their subsequent relaxation, facilitates and increases the onward current of the blood, and prevents it from becoming too sluggish for health. The oxidation of the blood reacts healthfully on the elastic tissues—as the blood, pure or impure, cannot avoid acting upon the neighbouring parts—and keeps them in tone and vigour, thus enabling them to discharge their functions with ease, and play their part in the proper purifying of the blood. The effect of the spasm of hooping-cough changes this condition of matters. On its accession we have tonic and forcible contraction of the fibrous tissues, brought on by the specific action through the nerves. This being kept up during the continuance of the cough, completely empties the cells of their air, tidal and residual; stops and delays the passage of the blood in the capillary vessels. The action of the spasm on the air cells in this way causes congestion of the blood-vessels of the lungs, and even retards the flow of blood supplied to nourish the air tubes themselves, because not only have we the spasm acting on the capillaries of the air cells, but on those as well which supply the smaller bronchial tubes.

The effects of the spasm do not pass away instantly, nor are the proper functions of the part resumed immediately, as if they had never

been disturbed. By an external examination with the stethoscope, shortly after one of the fits of coughing, we find evidence of congestion still remaining, and which will remain a longer or shorter time, according to circumstances. In other words, the effect of the spasm upon the normal condition of the tissue and minute parts of the lungs is—judging from results—of the nature of paralysis, though of a temporary character; at all events, the strength of the contraction brought to bear upon the minute tissue is so great that on the removal of the contracting force they are unable to resume their duties till they have regained somewhat of that tone which they had lost.

We know the result of congestion and relaxation throughout the other parts of the body. The same happens in congestion of the air-cells and blood-vessels of the lungs. Blood ceasing to flow; relaxed tissues and exudation of fluid into the cavities of the cells and tubes. In this way we have those diseases of the chest which most frequently follow an attack of hooping-cough, bronchitis, pneumonia, emphysema, collapse of the lung &c. Our object at present is not with the complications of hooping-cough, but to give the *rationale* of a style of treatment which, though it does not cure the disease, enables us to keep it in its simplest form—preventing complications—and lead it to a safe and satisfactory termination.

Dr. Maclean's recommendation in the treatment of the hooping-cough of children is to allow them every facility for being in the "open air;" to go on with their usual games, taking care in the cold weather to have them well and warmly clad, as is recommended by most authors; to romp about and enter into all the life and action usually characteristic of children, not stinting them in regard to motion, though this has been objected to by some writers as tending to cause an accession of the cough. In children too young to play without a guide the patient ought to be carried out of doors, only using such precautions as would be taken with them in the usual state of health.

Considering what has been remarked regarding the action of the spasm upon the minute tissues of the lungs, we have the production of a debilitated condition of the parts surrounding, and commencing in the ultimate ramifications of the blood-vessels—including those supplying the bronchial tubes—and involving, to an appreciable degree, the strength of the whole system in its depressing effects, our first object in treatment, seeing we cannot check the disease itself, is to prevent the lungs and body generally from being so lowered in strength that the complaint can overpower the patient. In treatises on this subject, means to prevent weakness were recommended to be adopted towards the termination of the illness, instead of from the beginning. The treatment should be much that followed in fevers—keep up the strength and treat complications. Hitherto the treatment has been to attack the disease itself as embodied in the cough, but, not knowing its nature, our efforts have been more or less useless. By putting the body into proper condition, and keeping it so—the disease itself not being necessarily fatal—it will be enabled to resist the extra strain put upon it by the hooping-cough. Practically, by giving the patient plenty of fresh air and causing him to take exercise, he is receiving continuously tonic treatment. Any temporary depressing effect the disease may have on

the body will be counteracted by the immersion of the body and lungs in this penetrating tonic fluid. Tonic medicine can only act fitfully, and by circuitous channels through the blood; but the continuous application of the cold-air bath—which is even applied locally to the affected tissues through the air vesicles—keeps the bracing material in contact with the body, and with the parts more immediately weakened, at the time the depressing agency is at work. So soon as the paralysing power is removed the tonic resumes its sway, and props up all the parts till the return of the cough, when they are better able to resist and not allow new complications to arise. It will thus be seen why it is not necessary to keep the little patient "quiet and still" to prevent the induction of the paroxysm. The cough will return at regular intervals, whether you keep the patient in one position or not; but if you allow no movement, and enforce the dwelling in a warm and unvarying temperature, you allow the effects of the spasmodic cough to have full sway, so that neither medicine nor food has power to check the increasing debility. By allowing unrestrained muscular exertion and exposure to the tonic action of the air you keep the body in a condition to resist those secondary results and to bear up till the disease has run its course.

To state the management of hooping-cough in a few words, this treatment Dr. Maclean would recommend at all seasons of the year, summer and winter. In the winter warm, in the summer light clothing; nourishing and easily digested food; free exposure to the ordinary atmosphere, combined with muscular exercise when practicable; cold baths night and morning, with friction to the skin, the temperature of the water according to the age &c.; and an occasional gentle purgative.

Art. 273.—*Cold Food for Infants.*

By F. King, Surgeon U.S.A.

(*British Medical Journal*, August 10.)

Under the above heading Mr. King writes to the *Philadelphia Medical Times* as follows:—

"Our best authorities direct that the [cow's] milk should be given to the child at the same temperature as that of the mother's milk—from 90° to 95° Fahrenheit—and, when great accuracy is required, a thermometer employed. On reflection it is obvious that these instructions can never be carried out so that the little one will take all its food at the same temperature; for during a meal the bottle becomes cold, and there may frequently be considerable difference of temperature between the first and the last milk imbibed by the infant. It is unnecessary to state that very little will upset the feeble powers of the digestive organs in the early days of infantile life; and this difference in the temperature of the food, I am disposed to believe, is one of the causes of gastric and intestinal disorder which we so often have to deal with among infants brought up by hand. Instead of giving warm milk, I have adopted the plan of giving cold milk entirely—ordering the

babe's bottle to be kept standing in iced water in the summer and in a cold place in winter. This method I have found, from practical experience, to answer remarkably well. If there is any tendency to diarrhœa I recommend the milk to be heated to 212° Fahr., and afterwards allowed to get quite cold before being used. In private practice I am of opinion that bottle-fed infants generally have their food given them too warm. . . . . They soon like it even better than warm food, and during the teething period cold milk seems especially agreeable to the inflamed gums of the little sufferers." The above plan for the preparation of food for infants is, the *Boston Medical Journal* thinks, worthy of trial. We all know the difficulty of having artificial food properly prepared, notwithstanding minute directions are given concerning it and the importance of keeping the nurse-bottle scrupulously clean. Many devices are resorted to by those who have the care of infants to avoid the trouble of freshly preparing the food every time it is wanted, and the temptation is great, particularly at night, to have in readiness a quantity sufficient for several meals. As a consequence come the various disturbances to the system resulting from the ingestion of food which is often sour before it is taken. If it can be given cold without detriment to the child, there seems to be no good reason why the diet should not always be fresh."

Art. 274.—*On Hæmoptysis in Children.*

By Dr. Rasmussen.

(*Hospitals Tidende*, xiv. 109, 113, 1872 ; *Schmidt's Jahrbücher*, No. 7, 1872.)

Hæmoptysis in children, especially in those under six years of age, is, as is well known, a very rare phenomenon, whether as a result of phthisis or as an initial affection. The following cases, therefore, seem to be of great interest :—

As an example of initial idiopathic hæmoptysis Dr. Rasmussen reports a case in which the pulmonary bleeding occurred in a boy aged eleven years, who, after violent exercise in a warm atmosphere, had been exposed to a draught of cold air; the hæmorrhage was not considerable, and ceased in the course of four days. During the subsequent four months no signs of pulmonary phthisis were manifested.

Dr. Rasmussen gives an elaborate report of a case in which a boy aged six years died suddenly from hæmoptysis. On post-mortem examination he found suppurative inflammation of the cervical glands and of the root of the lung, with perforation of the right bronchus and the right branch of the pulmonary artery, catarrhal pneumonia, diffuse interstitial nephritis, and caseous degeneration of the mesenteric glands. During life percussion gave a dull sound, and auscultation revealed bronchial breathing and large crepitation at the inner portion of the right infra and supra-spinous regions. The cough had a peculiar hollow tone. There was no general tuberculosis.

The third case was one of fatal hæmoptysis occurring in the course

of phthisis in a boy aged three and a half years. On a post-mortem examination Dr. Rasmussen found caverns, chronic interstitial pneumonia, peribronchitis, and miliary tuberculosis in the lungs, an aneurism of the pulmonary artery opening into one of the caverns, miliary tuberculosis of the pleura, spleen, liver, and kidneys, caseous degeneration of the bronchial glands, and tuberculous ulceration of the ileum. From the pathological termination of the chronic pneumonia partially in chronic pneumonia and partially in caseous degeneration—both of which led to formation of caverns—it is evident that the course of the disease was the same as that generally taken in adults.

Dr. Rasmussen associates the fact that hæmoptysis rarely occurs in children with a pathological peculiarity in the pulmonary phthisis affecting such patients. It is known that caverns are not frequently formed in children, and that, as a rule, in this class of patients caverns, when formed, are the result of necrosis of the central portions of dry caseous masses; in these instances the surrounding vessels have been obliterated, and therefore cannot give rise to hæmorrhage. As the child advances in years the tendency increases to the development of the kind of caverns met with in adults—hollow spaces the walls of which are formed of condensed lung tissue which contains vessels that are *not* obliterated. Besides these there are caverns which are apparently influenced by a slight degree of bronchiectasis. These occur most frequently in adults, rarely in children; consequently the formation of vascular dilatations must occur less frequently in the latter.

Art. 275.—*On Rachitis.*

By John S. Parry, M.D., Philadelphia.

(*American Journal of Medical Sciences.*)

Dr. Parry is not prepared to adopt the view that rickets is hereditary, though this opinion has been supported by some illustrious authorities, such as Herring, Ritter von Rittershain, Hennig, Stewart, Whitehead, Merei, Aiken, Willshire, Niemeyer, Vogel, and Hillier. Meigs and Pepper believe that there is no evidence to show that it is ever hereditary. Holmes is of the same opinion. Before this Gregory had spoken more positively upon this point, saying that the constitution of the parents has little to do with the production of the disease; but the most positive authorities in regard to the matter are Routh, E. Smith, and Sir William Jenner, all of whom deny that it is even transmitted from parent to child. Dr. Parry has several times seen women who presented indubitable evidences of having suffered from rachitis in early life, and who had borne large families, none of whom presented any manifestations of the disorder. It has been spoken of as a diathetic disorder, but it is not diathetic as struma, tuberculosis, and syphilis are. In other words, the child is not born with a predisposition to rickets, except so far as it is influenced by age. The most potent and frequent cause of the disease is the use of improper food. Long ago it was noticed that this affection might manifest itself after any acute disease which

prostrated the child; and that rickets is debility modified by age (Gee's idea) does not seem so far wide of the truth. According to the author's experience sex has no influence in causing the disease.

Art. 276.—*Treatment of Cholera Infantum.*

By John O'Reilly, M.D.

(*American Practitioner*, August.)

Dr. O'Reilly recommends in the gastric types, where exhaustion soon occurs and cerebral symptoms are apt to set in early, calomel and bromide of potassium, with tincture of hyoscyamus, as follows: ℞ Calomel, gr. x; pepsine, subnit. bismuth, āā gr. iij. M. Divide into ten parts, of which give one every hour.

℞ Bromide potassium, ʒss; tincture hyoscyamus, ʒij; water, ʒj. M. S. A teaspoonful every three or four hours. The bromide of potassium acts as a brain sedative, the hyoscyamus exerts a general soothing power, while the calomel, by its peculiar purgative action, relieves gastric congestion.

In cholera infantum of the intestinal form he prescribes the following: ℞ Acetate of lead, gr. iv; glycerine, ʒj; mint water, ʒss; tinct. opium, ♏ iij; distilled water, ʒiij. M. S. A teaspoonful every two hours until the operations are less frequent. This alone frequently relieves the patient; but where the case is of any standing calomel is generally required, and then he directs the following: ℞ Calomel, gr. iv; bicarb. potash, gr. iv; white sugar, gr. ij. M. Divide into four parts and give one morning and evening.

Art. 277.—*On Retropharyngeal Abscess in Infants.*

By Professor Aberlin, of Stockholm.

(*Schmidt's Jahrbücher*, No. 5, 1872.)

According to Professor Aberlin retropharyngeal abscess occurs not unfrequently in very early childhood. This affection, however, is then often overlooked or mistaken, a fact which may be explained by the difficulty of diagnosis and by the slight mention of this subject in works on diseases of children. In old handbooks it is not described at all and in recent works but briefly, and, as it seems to Professor Aberlin, without any reliance on personal observation. Even in journals only a few cases have been recorded, and yet this kind of abscess is to be met with rather frequently in infancy, according to the author as a result of a delicate condition of the tissues, and requires the more care and attention as upon early diagnosis and treatment a favourable termination of the affection mainly depends.

Of the two varieties of retropharyngeal abscess—viz., that resulting from inflammation and necrosis of the spinal column and its ligamentous and cartilaginous apparatus, and that consequent on inflammation of the

connective tissue between the posterior wall of the pharynx and the cervical vertebræ—it is the latter that is frequently met with in infants, in whom it presents very varying forms with regard to size and extent. It may be limited to a small portion of the posterior wall of the pharynx, or it may extend downwards along the œsophagus and round both sides of this tube. It often exists externally, and not unfrequently occurs in connection with adenitis and acute exanthemic fevers, especially scarlatina. Whether this form attacks by preference scrofulous children, as some suppose, Professor Aberlin cannot determine. In the first months of life it is generally difficult to decide whether a child is scrofulous or not, as this morbid condition does not usually present its first manifestations until a later period.

The symptoms vary much, and principally in their relation and intensity; they either come on slowly and insidiously and take a prolonged course, or they are violent from the beginning and proceed rapidly, with fever, wakefulness, and sometimes a peculiar cough not unlike hooping-cough. The symptoms which are more indicative of the affection are difficulty in swallowing, dyspnœa, alteration in the voice, a hissing or whistling sound during inspiration, inability to move the head without pain; these vary in degree in different cases, and sometimes are present and very intense from the earliest stages of the affection, and at other times come on gradually. Since one or other of these symptoms is generally predominant it is difficult, if not quite impossible, to sketch a plan of the disease which could be applied to all cases. It may be laid down as a rule, however, that each symptom increases in degree as the abscess enlarges and extends. In the most advanced stage deglutition is quite impossible; the change in the voice has proceeded to complete aphonia and the difficulty in breathing to threatening suffocation. Of course many modifications are met with according to the situation of the abscess. It is worthy of remark that the symptoms do not always increase uninterruptedly in intensity, but often occur in well-marked remissions. The attacks of choking have precisely similar characters to those of hooping-cough. Convulsions have been frequently observed in cases of retropharyngeal abscess in young children, but these are to be regarded as only casual complications.

In every case where difficulty in deglutition and dyspnœa are simultaneously present, the pharynx must be examined with the greatest precision, and this examination be repeated if the first attempt has gained no result. As a simple inspection is generally defective, Professor Aberlin recommends an examination with the finger, which can be introduced without great difficulty and may feel any swelling that may exist on the posterior wall of the pharynx. Protrusion of the abscess between the tonsils, a condition described in many recorded cases, has never been observed by Professor Aberlin, who holds that this rarely occurs. Redness of the pharynx is present in acute cases and absent in insidious cases. A diagnosis difficult in itself is naturally rendered more difficult the greater difficulties there are opposed to the examination. As an illustration of the difficulties to be overcome in the diagnosis and examination, Professor Aberlin alludes to a case reported by M. Giraldès in which diagnosis from inspection was impossible, and from exploration with the finger extremely difficult.

The affection cannot be diagnosed until after the full development of the abscess and on repeated examination. According to Professor Aberlin retropharyngeal abscess in infants is not unfrequently confounded with croup, catarrhal laryngitis, œdema of the glottis, and other affections. The case, however, is generally found out after bursting of the abscess or on a post-mortem examination.

When the diagnosis has been made early and a suitable treatment has been applied the prognosis is tolerably favourable. On the other hand, if the affection has been neglected and the abscess does not burst spontaneously death is unavoidable. Even with spontaneous opening of the abscess it may happen that its contents are discharged into the air-passages so as to cause death by suffocation. Secondary pulmonary lesions may exist with the abscess, and on their part give rise to difficulty in the diagnosis and also to an unfavourable prognosis.

Opening the abscess, simple as the proceeding may seem to be, is not always free from difficulty, and may even be attended with danger. Beyond the difficulty in reaching the abscess there is the danger of suffocation from the downward flow of its contents. Professor Aberlin once saw death occur instantaneously from this cause. This unhappy result may the more readily occur since, on the opening of the abscess and the rapid diminution of the swelling, the respiration suddenly becomes easier and a deep inspiration at once takes place spontaneously. By using a trocar and by rapidly bending the head forwards this accident may be prevented.

Art. 278.—*Injury to Abdomen—Typhlitis—Perforation of the Vermiform Appendix—Peritonitis—Death.*

Under the care of Mr. Howard Marsh, at the Hospital for Sick Children.

(*British Medical Journal*, November 9.)

The following report and remarks are by Mr. R. W. Parker, House Surgeon:—

A. E. H., a boy aged seven, was brought to the hospital in August last, with the following history. While walking in the street, with his head turned in the wrong direction, he had run against some iron railings and struck his abdomen. He went home, but did not say anything about it, as the accident appeared very trivial. He was sick several times during the night, and, on the following day, complained of pain and tenderness "in his stomach." On being questioned by his mother he told her about his accident. Next morning, being the second since the injury, he was brought to the hospital and saw Mr. Marsh. At this time he complained of pain and tenderness in the abdomen, for which poultices were ordered and rest in bed enjoined. Until the following Saturday, on which day he was again brought to the hospital, he kept his bed, felt and looked ill, his diet being milk and beef-tea; his bowels had not acted since the previous Sunday; the pain in the abdomen was worse; his bladder was full, and he could not

empty it. Chloroform was administered, in order that a more careful examination might be made than was possible without it, on account of the pain. The urine was drawn off, and, on manipulation, there was now felt an induration, apparently in the abdominal parietes in the right iliac region, but no fluctuation; the abdomen was much distended. He was sick after the chloroform, and looked ill; the vomiting continued all Saturday and Sunday, until 2 p.m., when he died.

Post-mortem examination thirty-six hours after death.—On opening the abdomen a quantity of fœtid gas escaped. The intestines were distended with air; they were glued together with recent peritonitic lymph. A small round mass of hardened fæces was found in the right iliac fossa, near the vermiform appendix, which, on examination was found to be perforated; the appendix was glued to the colon by recent lymph; the intestines were otherwise healthy.

Remarks.—The case is interesting in the following points:—

1. The illness was thought to result from *injury* to the abdomen; and application was, therefore, made to a surgeon, who considered it an incipient abscess in too early a stage for any active interference, and typhlitis was scarcely suspected.

2. The *vomiting*, after the chloroform—by no means an unusual occurrence—at first excited no alarm, and ice and the usual remedies were ordered, but without any relief.

3. The *accident*, which was a very slight one, and which, under other circumstances, would have been harmless, was in this case sufficient to set up acute peritonitis, where it had probably existed for some time previously in a subacute and localized form.

4. How far the *manipulation*, which was nevertheless gently and carefully performed, may have helped the ulcerative process to perforate the appendix is a subject for serious speculation.

5. Whether the *vomiting*, which quickly and persistently followed on the chloroform, brought about the fatal event earlier than would otherwise have been the case is another point, which adds a certain medico-legal interest to a very instructive clinical study.

Art. 279.— *Treatment of Cancrum Oris.*

By C. S. Kittredge, M.D., of Oakland, late Assistant Physician at the Nursery and Child's Hospital, Randall's Island, N. Y.

(*The Western Lancet* and *New York Medical Record*, Oct. 1.)

Dr. Kittredge publishes nineteen fatal cases of this formidable affection—which is a malignant form of ulcerative stomatitis—induced in children under five years of age predisposed to tuberculosis. The duration of this disease is from six to sixteen days, running a most rapid course when commencing in the cheek or throat, but somewhat slower in its progress when commencing in the gums. The disease demands prompt and energetic attention. He commences with the chlorate of potassa, in from five to ten-grain doses every four to six hours, and continues it

during the whole progress of the disease. The mouth must be frequently washed with a weak solution of liquor sodæ chlorinatæ, ℥j to water ℥xij, and after mortification has commenced, a pledget of soft linen, wetted in this solution, should be constantly kept between the sore and the adjacent tissue. Tonics and stimulants should be freely given on account of the great prostration, and iron with bark or quinine in as heavy doses as the child will bear, and strong beef-tea in place of solid food. Out of sixty-seven cases of stomatitis treated during the year, there were nineteen deaths, or 28 per cent. Of the fatal cases twelve were males and seven females. The average age was two years and eleven months. In sixteen cases the primary disease was rubeola. Fourteen autopsies were made, and in every case tubercles were found in great abundance. In thirteen cases the tubercles were in the lungs, and in the other the mesentery was filled with miliary tubercles. He remarks in conclusion that cancrum oris has a close connection with tuberculosis, and believes that it can exist only in children of a tuberculous diathesis.

Art. 280.—*On the Etiology of Tubercular Meningitis.*

By Dr. I. Bierbaum.

(*Journal für Kinderkrankheiten*, lvii ; *Schmidt's Jahrbücher*, No. 6, 1872.)

1. There is an hereditary predisposition in tubercular meningitis. It seldom occurs that one case *only* occurs in one and the same family. As a rule several children in the family are thus affected. A predisposition, however, may be acquired.

2. This predisposition consists in the scrofulo-tubercular diathesis. It makes no important difference whether this diathesis can be recognised by quite unequivocal signs, or manifests itself merely as constitutional debility, which is closely allied to scrofula or tuberculosis and leads to this affection.

3. It is by no means a necessary condition that the father or mother should have been in early life affected with this cerebral disease.

4. The direct transmission of the scrofulo-tubercular diathesis from parents to children has a far greater etiological significance than the existence of this predisposition in collateral relations

5. Tubercular meningitis is met with only during infancy, and occurs more frequently during the first than during the second period of dentition.

6. Sex has no special influence on the frequency of the affection.

7. Whether cold or warm seasons are more favourable to the development of the affection has not yet been determined.

8. Climatic, social, and antihygienic conditions do not favour the development of this affection, except so far as they influence the scrofulo-tubercular diathesis.

9. This cerebral affection never occurs epidemically.

10. The exanthemata are of great importance as indirect causes of the affection. Measles especially has great influence.

11. Inflammatory affections of the respiratory organs occasion this affection of the brain more frequently than hooping-cough.

12. The abdomen is the productive source of several conditions favourable to the development of tubercular meningitis.

Art. 281.—*On the Treatment of Itch in Children.*

By Dr. Alois Monti, of Vienna.

(*Jahrbüch für Kinderheilkunde*, iv. 2; *Schmidt's Jahrbücher*, No. 6, 1872.)

Balsam of Copaiba.—The author having found out from experiments that this agent kills the itch parasite, applied it in practice amongst children. After previous washings the pure balsam is rubbed in two or three times daily. This inunction produces extreme redness of the delicate skin of the children, which, however, disappears in the course of half-an-hour. A new eruption is not produced through the use of the balsam. The itching usually ceases after the first application, the efflorescence of the skin remaining until the third or fourth application, after which it disappears. In all cases the cure was complete and relapses did not occur. The duration of the treatment varied between two and twelve days. Dr. Monti never observed any injurious action of the balsam on the urinary and digestive organs. The form of the skin disease which was the most rapidly cured was scabies nodosa without eczema; on eczema balsam of copaiba has no influence whatever. The most obstinate form is scabies pustulicis, for the treatment of which, according to Dr. Monti, corrosive sublimate is very suitable. Copaiba balsam is cheaper than balsam of Peru, and has a more agreeable smell; it does not soil the linen, and for suckling children is to be preferred to sulphur.

Carbolic Acid.—Dr. Monti has used this agent in a lotion (3·75 grammes of carbolic acid to a pint of water) and in a salve (3·75 grammes to 120 grammes of simple ointment). After preliminary ablution of the patient, the carbolic acid is applied in the form of a wash, or is rubbed in, or, again, in cases of pustular scabies, as a continuous dressing. This agent causes slight redness and burning pain on the skin, which soon pass off. In abraded and infiltrated skin intense redness is produced, but no inflammation. The eczematous rash seems to disappear speedily after the application of carbolic acid. In all the cases thus treated complete recovery was attained, generally in from two to four days and after from six to nine applications. When eczema had been present the treatment lasted longer, generally for about twelve days. Dr. Monti never observed any indications of the poisonous action of carbolic acid. He thinks that this plan of treatment is very much to be recommended for scabies in children; the carbolic acid not only acts favourably upon an existing eczematous eruption, but never excites a fresh eruption of this kind. This agent is very convenient, and less costly than Peruvian balsam or balsam of copaiba, and has the advantage over styrax in disinfecting and not soiling the linen.

Art. 282.—*On Purulent Ophthalmia of Infants.*

By Haynes Walton, F.R.C.S., Surgeon to St. Mary's Hospital, and Surgeon in charge of the Ophthalmic Department of the same.

(*Medical Times and Gazette*, Nov. 9.)

This is essentially the same disease as purulent ophthalmia in the adult, merely modified by the undeveloped tissues of the babe and the activity of the growing processes—the infant organism—and generally more severe.

Symptoms.—About three or four days after birth the eyelids have a tendency to stick together; their edges are a little swollen and redder than natural; in the daytime the light is distressing and the eyes are kept closed. After this a little muco-purulent secretion is found, then follows palpebral inflammation with the formation of pus. The tumefaction is greater in proportion than in the adult, so that the palpebræ stand out like round tumours, and the upper is often pushed down over the under one. Such swelling necessarily presses them tightly together. Under this mechanical state, and as the discharge is not very copious, it is scarcely noticeable, and its character is not readily discerned. Its colour varies, being sometimes yellowish, sometimes greenish, and sometimes red from the admixture of blood. In a jaundiced child it is very decidedly yellow.

It is seldom that the disease at once assumes intensity. In consequence of this it is often erroneously supposed to have a later origin—that of two or three weeks after birth. The overlooking of it at an early period is unfortunately frequent in all classes of society. The child cannot complain and express its sensations. The concomitant tegumentary swelling conceals the conjunctiva, and the effects of the inflammation on it. Even when the early inflammatory symptoms are noticed, too commonly they are attributed to a cold in the eye, and expected soon to pass away. The consequence is that irreparable damage occurs before treatment is applied.

The conjunctiva swells more than in the adult, and there is farther dissimilarity in its being very much raised and actually loosened in all its regions by effusion of serum in the sub-conjunctival areolar tissue rather than liquor sanguinis. In consequence of this a prolapse of it is always impending, and occurs at any attempt to examine the eye, whereby the under or both eyelids may be everted. Soon after this the retrotarsal fold may prolapse of itself, like a circular red roll, and evert the tarsal margins. The action of the orbicularis muscle increases the eversion.

In from eight to twelve days from the early symptoms, when the ocular chemosis is greatest, the cornea gets hazy in spots or generally, and red at its edge, then semi-opaque and infiltrated with pus to a small extent, or through the entire breadth, followed by penetrating ulceration; or, without an abscess forming, it may slough in part or entirely; or sloughing through a portion of the laminæ may be succeeded by ulceration and penetration, or circular ulcers may form

and perforate it. Just preceding either of these processes the eyelids swell yet more, especially the upper one, which is also very red and shining, and the secretions are more purulent and more copious. The child is restless through pain. There is considerable photophobia, the tongue is white, and the body wasted.

The ulceration, or the slough, or the abscess, is usually central, unless there be a multiple of the one or the other.

The lens is more prone to escape through the corneal breach in infants than in adults. With much loss of the cornea its expulsion is the rule.

As chemosis does not become hard and adhere to the cornea, there is, so far as Mr. Walton has observed, an absence of the grooving marginal ulcer.

With mere penetration of the cornea, or considerable or entire destruction of it, the acute symptoms decline, the bright red swollen upper eyelid becomes flaccid and dark red, and the discharge lessens and is less purulent. With the first condition (penetration) the iris prolapses, and may effectually plug up the aperture, or, closing it imperfectly, a staphyloma is formed. With the second, if the lens and the whole or a part of the vitreous humour have escaped, the eyeball shrinks to a mere button. If the humour be retained, whether the lens be lost or not, it shrinks with a flattened front, partly covered by shrunken cornea and partly by transparent cicatrix, or entirely by the latter.

Relapses do not occur, and the conjunctiva does not become affected by the process of proliferation ending in granulation, as in the adult.

Milder cases are met with in which the inflammatory symptoms are very much less, but the difference as to the sthenic and asthenic action is never so marked as in manhood.

Course.—The disease generally begins in one eye, but not infrequently in both. When only one is primarily affected, the other is sure to be inoculated from it unless precaution be observed.

When very sthenic, it is never subdued under ten or fourteen days, and weeks elapse before the conjunctiva is again healthy.

The eyeball is more likely to be involved from the extension of the inflammation than in the adult.

When the cornea becomes turbid at several points or throughout, the danger has reached its height.

Diagnosis.—Catarrhal ophthalmia is often mistaken for purulent ophthalmia. This accounts for the cures which we hear of from slight agency, such as excluding the light, applying a small blister to the temple, and so forth. It accounts also for reported epidemics of purulent ophthalmia among infants in this or that place, and said to be mild, and not inflicting damage to the eyes.

Hereditary syphilitic inflammation of the eyeball, with the symptoms of hazy cornea, and hyperæmia of the conjunctiva and of the edges of the eyelids, may be mistaken for purulent ophthalmia. The absence of any purulent discharge ought to be enough to prevent any blunder being made.

When the disease is developed, the merest inspection of the conjunctiva will cause the purulent discharge to flow out, the appearance of which always proves the existence of purulent conjunctivitis; and its stage can generally be told from the condition of the eyelids.

But more information is necessary than a mere knowledge of the existence of the disease. We ought to ascertain if any and what damage has been done. A systematic inspection must be adopted. This can only be done effectually by retracting the eyelids with two retractors. If these instruments be not at hand a pair may be extemporized out of bits of wire or hair-pins. If the conjunctiva be much swollen it is useless to attempt the examination with the fingers, because the cornea cannot be sufficiently exposed. An eye which might have been saved may be destroyed by the bursting of a damaged cornea from rough handling, whereby the lens and some of the vitreous humour escape.

Causes.—Mr. Walton attributes the origin to vaginal discharge of the mother, which has been transmitted to the eyes of the child during parturition, such discharge being for the most part leucorrhœal, and sometimes gonorrhœal.

Surgeons speak of cases occurring in the children of perfectly healthy mothers—at least, of such as deny the existence of any kind of vaginal discharge whatever when they are questioned. As the investigation cannot be carried farther the non-vaginal source in such instances must remain doubtful.

The same kind of agencies which produce purulent inflammation in the adult may of course excite the disease in children, but this applies rather to a later age.

It is supposed to be occasionally due to inoculation with the lochia, from the hands of the mother or those of the nurse.

That it is sometimes communicated from infant to infant, in nurseries and lying-in institutions, is certain. It is equally clear that it arises in such places where puerperal diseases prevail.

Whatever be the reputed origin, the disease is most frequent in weakly children, who are exposed to the debilitating causes of bad air, cold, insufficient clothing, insufficient food—in fact, among the poor. But Mr. Walton asks, Are not the mothers of these children very prone to leucorrhœa? Again, it is more common in premature infants.

Prognosis.—The effects are more severe when there has been gonorrhœal inoculation. Then the destructive end quickly follows the first symptoms. The eyelids and the conjunctiva always swell and inflame more, the discharge is thicker and more copious, and the child suffers much pain.

Ordinarily it is more severe in damp and cold than in dry and warm weather, and among the children of the poor and necessitous than among those of the higher classes. It is the cause of blindness in the greater portion of the blind poor.

The longer the disease has been allowed to remain untreated, the more tedious will it be to cure.

While the cornea is yet clear the eye may be saved from any damage. If it be hazy, some destruction of it will probably follow.

If there be superficial ulceration without onyx, probably only a slight speck of opacity may remain, which would be of no consequence provided that it is not over the pupil. If the ulceration be deep there will be a large opacity. Haziness in association with ulceration may be dense enough to hide the iris, and yet clear sufficiently to enable the eye to be used. When slight it may entirely pass away, except just around

the ulcer or the spot of penetration, where it is always densest, and always remains in some degree.

If there be considerable onyx in all probability the eye will be destroyed. The same may be said of sloughing.

Small partial central capsular cataract, like a white dot, sometimes very minute, and very rarely half as large as the pupil, may occur. Its nature has been explained under the head of "capsular cataract." Mr. Walton dissociates it from any connexion with ulceration of the cornea. The opacity proceeding from an ulcer and it seldom corresponds in position. It remains indelible; it interferes with the function of sight according to its size, apparently more by disarranging the adjustment than in any other way. The acuteness of sight is very often impaired in consequence of injury to the choroidal and retinal coats. This may occur when the cornea has not been much damaged.

Nystagmus and strabismus are sometimes sequelæ.

Ectropion and partial ptosis may occur, as in the adult.

Treatment.—The principles are precisely the same as those for the adult disease. The sthenic action must be reduced. A leech to the upper eyelid, or a leech to both lids, will produce sufficient bleeding. Children are quickly affected by the loss of blood, and the leech-bites should not be allowed to go on oozing. The application of cold is next called for, and its effects must be watched, so that there may be no undue chilling of the surface. The astringent should be resorted to rather earlier than in the adult, because it irritates less, and a quicker result is obtained. It may be applied in this way: Two persons are required for the work. The head is held. The eyelids are opened gently, and the discharge which gushes out is wiped away with a piece of soft wet rag. The lower and then the upper lids are next everted and wiped with another piece of wet rag. The lotion is then introduced with a brush.

The repetition should be as frequent as in the adult. One or other of the eyelids may become everted during this operation, especially if the child cry. It is overcome by pushing the swollen conjunctiva back and bringing the edges of the lids together. Mr. Walton has never incised the conjunctiva, nor has he resorted to any internal treatment.

Other details for general and local treatment should be the same as those given for the adult, regulated to meet the tender age of the patient. If the mother cannot supply the natural food, a wet nurse is requisite. Artificial feeding under the best system is defective, and its insufficiency is more marked when an infant is diseased.

When the inflammation of the palpebræ is but slight, and the increased temperature is not marked, the leeching should be dispensed with and the astringent at once applied.

The effect of treatment is marked. In two or three days the child begins to open the eyes, and in a week the symptoms of active inflammation have disappeared. The general health improves quickly.

Prevention.—In this destructive malady the stopping of infection is all-important. For many years Mr. Walton has pointed out that washing the eyes of the new-born babe might be a preventive measure, and insisted on the method when the presence of leucorrhœa or gonorrhœa has been detected.

APPENDIX.

Art. 1.—*Abstract of Lectures on Myology at the Royal College of Surgeons of England, June,* 1872.

By Professor Humphry, F.R.S.

(*Medical Press and Circular*, June 26, July 3 and 10.)

LECTURE I.

The Professor, in commencing his first lecture, announced his object to be to review the muscular system of man from a morphological and teleological point of view. We should always seek to know how a structure is formed, and why it is formed. What are the impulses to development we know not, and we have no right to dogmatize upon them. Whenever movement is required muscular fibres are formed adequate to the purpose. But that need for movement is not a stimulus to development. The muscles of respiration are all developed of the exact size and number and position necessary for effecting the required movements of the chest before those movements begin. Moreover, each fibre is formed of length proportioned to the range of required action. The range of contraction is about a third of its length, and the extent to which any given point can be moved measures about a third of the length of the muscular fibres which effect the movement. Although parts of the individual fibres only act successionally, this does not seem to be the case with the separate fibres, which are banded together in synchronous action by nervous agents. Hence the fibres converging on a given tendon are usually of equal length, allowance being made for the position of the muscle. All the fibres acting through the tendo Achillis are about two and a half inches in length, and the range of movement of the tendon is rather less than one inch. A variety of arrangements are provided for economizing muscular action, that the effect of a given muscular action may be as great as possible. This may be taken in connection with the fact that a given muscular fibre contracts in only part of its length at a given time, and if the uncontracting part is not able to resist the same tension as the contracting part—if, for instance, the fibre is a long one and the amount of contraction considerable—rupture may ensue. Hence we find various provisions for shortening the necessary range of action. Muscles are usually inserted near the centre of motion, the power thus sacrificed being more than compensated for by the velocity gained. This is well illustrated by the direction of the fibres of the intercostal muscle, and this is also why we so often find fibres of muscles crossing from their origin to their destination, as, for instance, those of the pectoralis major, the clavicular portion of which is inserted lowest into the humerus, the pectoral part highest, the influence of which in different positions of the humerus is obvious on consideration. Another way in which a great amount of movement is obtained from a certain amount of contraction consists in the passage of the tendons through certain bands or ligaments, before

reaching their destination. This is well seen in the biceps flexor cruris of the bird. In a muscle passing in a straight line between the two parts much greater contraction would be necessary. By the medium of tendons a greater number of fibres can be brought to bear upon a given point, and this is rendered practicable by the diminution of the range of movement. Muscles inserted near joints are nearly always contracted to tendons in passing over them; hence the enlargements of the ends of the bones requisite for security can be obtained without undue enlargement of the size of the limbs, and the muscular fibres themselves can be packed into a convenient position, as in the calf of man. It is a general rule that the muscular fibres are packed towards the trunk. This is well seen in birds.

In considering the disposition of the muscles of the trunk it is necessary to remember that the osseo-muscular system consists of a series of alternating membranous or skeletal and muscular planes. These in the fish constitute the great lateral muscle, but they undergo great variety of disposition in different animals. The skeletal planes may chondrify or ossify, and be converted into various parts of the trunk, vertebræ, ribs &c. or they may be obliterated by increased development of muscular fibres. Two lateral lines divide the dorsal muscle of the fish into two parts, corresponding respectively with the dorsal and ventral muscles of our own trunks. Dr. Humphry has tried to show that certain prolongations of the angle of the inter-muscular septa in the fish, which are not unfrequently tendinous, correspond to the tendons of our own dorsal muscles. These muscles in ourselves are interrupted below by the pelvis, and above by the skull, but in tailed animals they pass backwards into the tail; and in the Lepidosiren they are not interrupted by the skull, but pass onwards, and are confluent with the temporal and masticatory muscles, showing that these are really prolongations of the dorsal muscles, and giving an argument in favour of the view that these lateral fossæ of the skull really correspond with, and are a continuation of, the lateral grooves between the spinous and transverse processes of the back.

Some better classification of the muscles of the back is much to be desired, for the sake both of the student and of the teacher; but the fact that they are really one imperfectly segmented dorsal muscle renders any precise division impossible. Still they may be classed in three strata: Firstly, a superficial stratum, composed of muscular fibres passing obliquely from the spinous to the transverse processes; secondly, a series in which the muscular fibres pass vertically from one point to another nearly corresponding point in the vertebral column; and thirdly, a deeper series, in which the muscular fibres again pass transversely and obliquely, the direction of the obliquity being opposite to those of the superficial set. In the second stratum may be placed the *interspinales* (lumborum, dorsi, cervicis, capitis), and *intertransversales* (dorsi &c.) The large group of the erector spinæ is sufficiently characterized by the word *spinales* (dorsi, cervicis &c.); *transversalis* should be substituted for longissimus dorsi, and instead of sacro-lumbalis, the German term *ilio-lumbalis* (dorsi and cervices) may be employed. Some of these are not well distinguished from the deeper oblique muscles described as passing from the transverse to the spinous

processes, and therefore called *transverso-spinales* (dorsi, cervices, and capitis). The superficial ones take the opposite direction, and may be called *spino transversalis* (obliquus inf., splenius, colli, and capitis).

The ventral system of muscles, in front of the lateral line, presents much greater deviations from the simple type than do the dorsal. Still the transverse septal remnants of the primitive skeleton are represented by the inscriptions on the rectus abdominis, the sterno-hyoid, and occasionally on the omo-hyoid, and the ossification of certain septa constitutes the ribs, the limb girdles, and the hyoid bone. The ventral muscles may, however, be divided into three strata, corresponding to the strata of the back muscles. First, a superficial stratum corresponding to the external oblique, and continued upwards as the pectoral, latissimus dorsi, trapezius, and sterno-mastoid, and downwards as sartorius, tensor vaginæ femoris, gracilis, and gluteus. There is, secondly, a middle stratum corresponding with the internal oblique, and continued forward as external inter-costals, and the muscles passing from the ribs to the deeper parts of the scapula, and forwards from the scapula, to the head and from the ribs to the clavicle, and downwards, interrupted by the pelvis, but still traceable as the erector penis, accelerator urinæ, coccygeus, and internal sphincter. Thirdly, there is the deeper stratum corresponding with the transversalis muscle, internal intercostals, and part of the diaphragm. In the pelvis it is interrupted, but appears again converging on the bowels, as the levator ani. This layer in the cryptobranch forms one continuous sheet of muscle, which covers the whole of the under surface of the vertebræ, the inner surface of the abdomen, lines the thorax, and is continued forward to the head. In mammals it remains on the anterior surface of the lumbar vertebræ, constitutes the crura of the diaphragm, the internal intercostals, the longus colli, and the rectus capitis anticus major. In the middle part of the abdomen the fibres of the great lateral muscle are disposed longitudinally, and constitute in the fore part of the abdomen the rectus and in the back part the quadratus lumborum and psoas. The tendinous intersections in the rectus are not to be regarded altogether as representatives of the ribs, but rather of those skeletal structures from which ribs are liable to be formed. They have often been subjects of discussion, and the object gained by them is apparently the same as is served by the tendinous intersections in the muscle of the fish—to effect a shortening of the muscular fibres, and so to prevent too great a strain on their uncontracted portions. Still it is not easy to explain why there should be two above the umbilicus and one or none below.

The intercostal muscles in the thorax have somewhat the characters of the ordinary lateral muscle of the fish, but are modified in order to subserve the purposes of respiration. The problem of their mode of action cannot yet be regarded as completely solved. We have to bear in mind that each rib is not a plane, but an arc of a circle, rather larger than the one above, and each thus yields a better leverage than that above it. We may regard the several intercostal fibres as passing from the upper rib downwards, interrupted, it is true, by the several ribs. Their action on the ribs is greater as the circle described by the ribs is greater, and this attains its maximum about the eighth or ninth rib; there we have the greatest transverse diameter of the chest and the

greatest movement of the lungs. It is here also that there is a counteracting influence at work in the diaphragm tending to draw towards the ribs. The difficult question still remains—why the external intercostals extend a certain distance and then cease, and why the internal extend a certain distance towards the posterior part and then cease?

For further elucidation of these views the Professor referred to papers recently published by him in the *Journal of Anatomy and Physiology*, and to his "Observations on Myology."

LECTURE II.

The Professor began by observing that the upper and lower limbs are the produce of similar morphological impulses acting upon serially homological elements; yet that the one limb is not a modification of the other, nor are we certain that both are modifications of a simple common form, though there may be much probability in such a view. After reminding his audience of the statement made in the first lecture that the several muscles of the trunk are derivatives from the same elements as the lateral muscle of the fish, he proceeded to show that the muscles of the limbs are also to a considerable extent derivatives from the lateral muscles. The limb-girdles are ossifications in the transverse septa of the ventral part of that muscle; and as the limbs grow out from the girdles they carry before them ventro-appendicular expansions which become developed into skin, cellular tissue, muscle &c. The muscular stratum envelopes both limbs to a variable extent, and at the base of each limb spreads out in a funnel-like manner upon the trunk. It is divisible into a superficial and a deep layer. The superficial layer in the upper limb is in three sectors—the *pectoralis*, the *latissimus dorsi*, and the *trapezius* and *deltoid*. These converge upon the humerus, and each in its course is connected with the girdle. The connection of the *trapezius* and *deltoid* is effected by the spine of the scapula and the clavicle growing into the septum between these two muscles. This septum is the serial continuation of the septa of the lateral muscle; and the clavicle corresponds serially with the costal and epicostal bones which form in the abdominal parts of those septa in some animals. The connexion of the pectoral sector with the girdle is formed by the *pectoralis minor*, and that of the *latissimus dorsi* by the scapular attachment of that muscle. Parts segmented from the *trapezius* form the *rhomboids*. The superficial ventro-appendicular sheet in the lower limb is still more intimately connected with the pelvis than that in the upper limb is with the shoulder-girdle, and it extends farther upon the limb. It is divided into three sectors—the *gracilis*, corresponding with the *pectoralis*, the *gluteus*, corresponding with the *latissimus dorsi*, and the *tensor vaginæ femoris* and *sartorius*, corresponding with the scapular part of the *deltoid*. The external oblique fibres passing to the ilium correspond with the *trapezius*. The crural arch corresponds with the brachial arch; and an ossification in Poupart's ligament would correspond with the clavicle. The aponeurosis of the external oblique, above Poupart's ligament, corresponds with the trapezius and the cleido-mastoid above the clavicle; and the femoral fascia, below Poupart's ligament, corresponds with the parts of the deltoid and of the pectoral below the clavicle.

With regard to the deep ventro-appendicular stratum, it forms a

sheath covering the shoulder and hip-joints respectively, and is in each instance divided into four sectors. The dorsal sector forms the *infra-spinatus* and the *teres minor* in the upper limb, and the *gluteus medius* and *minimus* in the lower. The palmar sector is the *coraco-brachialis* and the *subscapularis*, answering to the *adductors* and the *obturators* in the lower limb. The anterior sector is the *iliacus* in the upper limb, and the *supra-spinatus* in the lower; and the posterior sector is the *teres major* in the upper limb, and the *pyriformis* in the lower. In making comparison of the muscles in the upper and lower limbs and in the limbs of different animals a very close correspondence must not be sought; for the developmental processes in each are freely modified to suit the respective requirements. Thus the attachments of corresponding muscles are often found to vary, the points of insertion varying as much as those of origin; so that the former are no surer guides to homological comparison than the latter.

Lastly, the Professor spoke of the deep muscles passing from the trunk to the girdles. These are the costo-clavicular or *subclavius*, the costo-scapular or *serratus*, which is continued forward as the *levator scapulæ*, and the *omohyoid*, which is a representative of a much more extensive connexion of the hyoidean muscles with the scapula in fish and urodelans. In the hind limb the *levator scapulæ* is represented by the *quadratus lumborum*, the *omohyoid* by some fibres of the *internal oblique*, and the *subclavius* and *serratus* by the *ischio-coccygeus* and the *ilio-caudalis*. The chief nerves and vessels to the limb pass between the two muscles last mentioned in tailed animals, as those of the upper limb pass between the costo-clavicular, and the costo-coracoid on the one side, and the costo-scapular on the other.

LECTURE III.

In his third and last lecture Professor Humphry continued the discussion of the muscles of the limbs. The *coraco-brachialis*, *biceps*, and *brachialis anticus* he showed to form one series corresponding with the *adductor*, the *semimembranosus* and *semitendinosus*, and the short portion of the *biceps cruris*; while the long portion of the last muscle is a derivative from the extensor mass—the gluteo-rectus series—which, inclining to the plantar aspect, has acquired a flexor action. The tendinous intersection in the *semitendinosus* he regarded as corresponding with a similar intersection in the Cryptobranch found at the junction of the caudal muscle with the flexors of the leg; and its persistence in man is to be associated with the great length of the fibres of the muscle, owing to the distance of its insertion in the leg from the centre of motion at the knee, and the consequent great range of its action. The fibres of this muscle in a woman of ordinary stature measured ten inches, while those of the *semimembranosus* measured only three inches, and those of the *biceps* six, the length in each instance being proportionate to the distance of the insertion from the centre of motion. The *quadriceps cruris* is evidently the serial homologue of the *triceps brachii*; and in the bat, where the rotation of the hind limb is the reverse of that usual in mammals, the *rectus cruris* arises from behind the acetabulum, just as the scapular portion of the *triceps* usually arises from behind the glenoid cup.

The several muscles on the flexor and extensor aspects of the middle and distal parts of the limbs were described as derivatives or segmentations from pronato-flexor and supinato-extensor masses, which are found in a simple form in tailed batrachians, but are more complicated in man. The divisions of these were described at some length. The supination and pronation in the upper limb and the throwing out of the heel bone in the lower limb are the features which necessitate the chief differences in the disposition of the muscles in the two limbs. A large proportion of the fibres on the plantar aspect in the hind limb are concentrated upon the heel, and subserve to the flexion of the ankle; whereas the corresponding fibres in the fore limb minister to pronation of the forearm and flexion of the digits, as well as to flexion of the wrist. Hence the representatives of the *flexores carpi* and the *flexor sublimis digitorum*, as well as of part of the *pronator teres*, are to be found in the outer head of the *gastrocnemius* and the *soleus;* the *plantaris*, which in many animals is continuous with the *flexor brevis digitorum pedis*, being the representative more particularly of the *fl. subl. dig. manûs.* The ulnar origins of the *pronator teres* and the *accessorius pedis* are remnants of the primitive pronato-flexor masses which have attachments to all the bones of the limbs. The former is present in the chimpanzee, but is not again met with till one reaches the reptiles, where it constitutes a *pronator intermedius*, connecting the *pronator teres* with the *pronator quadratus.* Its use is to carry on pronation during the flexed condition of the elbow, when the humeral fibres of the muscles lose their power. The use of the *accessorius* is in like manner to maintain the influence of the flexor digitorum upon the toes in the flexed position of the ankle. A well-marked *accessorius*, corresponding with that in the hind limb, is found in the fore limb in some of the saurians; but there is no such muscle in the fore limb of birds or mammals.

The Professor concluded his course by some remarks on the difference between a hand and a foot, first controverting the distinction drawn by the Rev. Professor Haughton from a supposed difference between the flexor tendons in the two. He observed that we must eliminate the features of difference between the terminal parts of the hind and the fore limbs; forasmuch as these relate to the distinction between the two limbs rather than to the distinction between a hand and a foot. This, he said, had not been sufficiently attended to by those who had recently considered the question, and, therefore, they had argued it upon a wrong basis. Pointing out the features which distinguish the hand of man from the terminal part of the fore limb of ordinary mammals, he remarked that a corresponding modification either of a fore or a hind limb would constitute a hand, although the features distinguishing either from the other were still present. Judged by this rule, the terminal part of the hind limb of a gorilla or a chimpanzee, notwithstanding its projecting heel and the presence of a peroneus muscle, has as much claim to be called a hand as the terminal part of the fore limb of the same animal. There is, therefore, no sufficient anatomical reason for rejecting the word "quadrumanous" as applicable to them, or the word "bimanous" as characteristic of man.

Art. 2.—*Vaso-Motor Physiology.*

By Henry Hartshorne, M.D.

(*Medical Press and Circular*, July 10.)

At the annual meeting of the American Medical Association, Professor Hartshorne, of Philadelphia, read a paper "On the Present Conditions of Vaso-motor Physiology." He remarked that having in 1856, in an "Essay on Arterial Circulation," published in the Transactions of the American Medical Association, advanced views somewhat at variance with the prevailing opinions, he had been led to believe that, recently, the progress of inquiry had developed facts which approached to a demonstration of the truth. Currently, it has been held, as stated in the works of Virchow, Bernard, Huxley, Marey, B. W. Richardson, and others, that the whole function of the muscularity of the smaller arteries (incorrectly confounded sometimes with the capillaries) is to limit, by a flood-gate or stop-cock action, the flow of blood caused by the impulse of the heart. Against this view there have been the opinions and reasonings of John Hunter, Sir Charles Bell, and a few others of the older writers, and an overwhelmingly strong presumption derived from general physiological analogy. Dr. Hartshorne wished to point out the progress made since the publication of Professor Lister's observations in 1858, and more especially the recent very important contributions towards it by Legros and Onimus (*Journal de l'Anatomie et de la Physiologie*, 1868-70). It was necessary, in order to perceive the bearing of the facts thus brought forward, to review briefly the whole ground of the inquiry. Attention was therefore called to the following points :—

1. Bowman, Marey, and others have abundantly demonstrated that the universal law of muscular fibre, pre-eminently obvious in the smooth muscle of organic life, is alternating, rhythmic, or peristaltic contraction. Presumably, therefore, we should find this true of the middle coat of the smaller arteries, and the burden of proof rests with those who assert the contrary. And, if it be alternating, we have every reason to believe that it is *propulsive*, not restrictive in its action.

2. Certain facts in comparative physiology are only to be thus explained; as, the completeness of the round of circulation in fishes with only a respiratory heart; the arterial dilatations taking the place of the heart in *amphioxus;* the distribution of arterialized blood from the reservoir-like arterial networks of the whale; the ordinary circulation in most articulates which have no heart.

3. *Acephalous fœtuses* are always *acardiac;* the propulsive power of the arteries is necessary to carry on their circulation. At a certain stage of development, every human fœtus is likewise acardiac, as truly as an insect or a myriapod.

4. Erectile tissues have been recently and carefully studied anew by Legros, who has decided that the evidence shows that "it is indeed *the contractile element of the arteries* which acts to produce erection."

5. Many familiar cases of physiological erethism are (as pointed out in Dr. Hartshorne's essay of 1856) manifestly of an active character. Such are—the determination of the blood to the maxillæ in dentition; to

the ovaries in ovulation, the uterus in gestation, the mammæ in lactation, and the testicles during the heat of male animals; the vascularity of the newly-growing antler of the deer &c. To none of these instances can the idea of "paralytic dilatation" of the vessels, with any show of reason, be made to apply.

6. Further facts are these—in paralysed limbs the pulse is often diminished in force and fulness; when mortification occurs, or a limb is crushed by a railway car or torn by a gunshot wound, little or no hæmorrhage occurs. Here a truly paralytic state of the arteries is produced and *the blood ceases to flow*. Under some other circumstances there is, of course, a paralytic dilatation of the vessels; as when they are exhausted by fatiguing over-contraction, or when the sympathetic nerve has been divided, as in Bernard's famous experiment with the rabbit's ear.

In decapitated criminals Robin observed that the blood does not spout from the divided carotid and vertebral vessels, but goes on through the head. Legros and Onimus found that when the large vessels are tied in animals the circulation continues; in cold-blooded vertebrated animals for a considerable time. Chauveau similarly found that firm compression of an arterial trunk, so as to obstruct its current, does not always arrest pulsation; and Legros and Onimus observed, in the retina of a man whose arteria centralis had been obliterated by a clot, distinct waves of pulsation still continuing in the minute vessels.

7. Dr. S. W. Gross's paper (*a*) was cited, showing the important influence of compression of an arterial trunk supplying blood to a part in a state of inflammation; the active participation of the arteries in that morbid process being thus made clear.

8. Application of these general facts to pathology becomes now important; as in reference to the nature of the condition ordinarily called fever; the spasmodic constriction of the blood-vessels in cholera, unduly restricted by Dr. George Johnson to those supplying the lungs; and the explanation of the hypertrophied state of the blood-vessels of the kidneys often found to occur in Bright's disease.

Lastly, it is concluded that we have now proof enough to show positively that *there is a true arterial systole*, following and carrying on the propulsive movement of blood begun by the heart, instead of the mere "stop-cock action" accepted still by most writers. In favour of this last there is really *nothing* except the somewhat hasty interpretation of one or two galvanic experiments by Weber more than twenty years ago and the taking for granted a conclusion from them, in contradiction to all general analogy. It may be considered that the true factors of the pulse are four: 1. The heart's impulse. 2. The *elastic* contractility, especially of the larger arteries. 3. The closure of the aortic valves. 4. The *muscular arterial systole*. As this last occurs *after* the others, and, in an artery so remote as the radial at the wrist, as late as the second sound accompanying the shutting of the aortic valves, its effect must be to *aid* in propelling the blood. It cannot be *nil*, because it empties the arteries after death. It is not a persistent rigidity or tonic contraction, or else it could be felt in some arteries in the intervals of the pulse, as it cannot. On the whole, it would appear that on this subject, with a vast deal of laborious experimentation, some want of care in reasoning has left the problem unduly long in reaching a final solution.

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